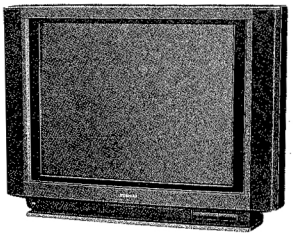
TOSHIBA

COLOUR TELEVISION

287D9F



SPECIFICATIONS

Input Power Rating :	98 watts, AC 220 volts, 50 Hz
Aerial Input Impedance :	75 ohm unbalanced type for VHF and UHF
Receiving Channels :	CCIR L-SECAM Standard :
	VHF ..... channels B to C, 1 to 6, B to Q (70~86)
	UHF ..... channels 21 to 69
	CCIR B/G-PAL Standard, CCIR B/G-SECAM Standard :
	VHF ..... channels 2 to 4, 5 to 12, S3 to S20
	UHF ..... channels 21 to 69
	CCIR I-PAL Standard :
	UHF ..... channels 21 to 68
	CCIR D/K-PAL, D/K-SECAM Standard :
	VHF ..... channels 1 to 12
	UHF ..... channels 21 to 69
	PAL, SECAM 50Hz/60Hz (Video Disk playback)
	4.43NTSC (VCR playback)
Intermediate Frequencies :	Picture I-F carrier frequency
	L System (V_H, U) ..... 38.9 MHz
	L System (V_L) ..... 34.47 MHz
	B/G, D/K System (V_L, V_H, U) ..... 38.9 MHz
	I system (U) ..... 38.9 MHz
	Sound I-F carrier frequency
	L System (V_H, U) ..... 32.4 MHz
	L System (V_L) ..... 40.97 MHz
	B/G System (V_L, V_H, U) ..... 33.4 MHz
	D/K (V_L, V_H, U) ..... 32.4 MHz
	I (U) ..... 32.9 MHz
Picture Tube :	28 inches, A66EAK51×01, 660 mm (measured on diagonal of viewable picture area), 110° deflection
Sound Output :	10.0 watts (at 10% harmonic distortion)×2, Max. 13.0 watts × 2
Speakers :	120 mm × 60 mm oval, 4 pcs
Aux. Terminals :	Headphone jack, 21 pin socket, S-VIDEO/AUDIO socket, External speaker terminal
Dimensions :	Height ..... 588 mm
	Width ..... 788 mm
	Depth ..... 474 mm
Weight (Net) :	37 kg

Specifications are subject to change without notice.

Printed in Japan Sep. 1989 (Sc

SAFETY INSTRUCTIONS

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND THE "PRODUCT SAFETY NOTICE" INSTRUCTIONS BELOW.

X-RAY RADIATION PRECAUTION

1. The E.H.T. must be checked every time the receiver is serviced to ensure that the C.R.T. does not emit X-ray radiation as result of excessive E.H.T. voltage. The nominal E.H.T. for this receiver is 26.0 kV at zero beam current (minimum brightness) operating at 220V a.c. The maximum E.H.T. voltage permissible in any operating circumstances must not exceed 27.5 kV. When checking the E.H.T., use the 'High Voltage Check' procedure in this manual using an accurate E.H.T. voltmeter.
2. The only source of X-RAY radiation in this receiver is the C.R.T. To prevent X-ray radiation, the replacement C.R.T. must be identical to the original fitted as specified in the Parts List.
3. Some components used in this receiver have safety related characteristics preventing the C.R.T. from emitting X-ray radiation.
   For continued safety, replacement component should only be made after referring the Product Safety Notice below.

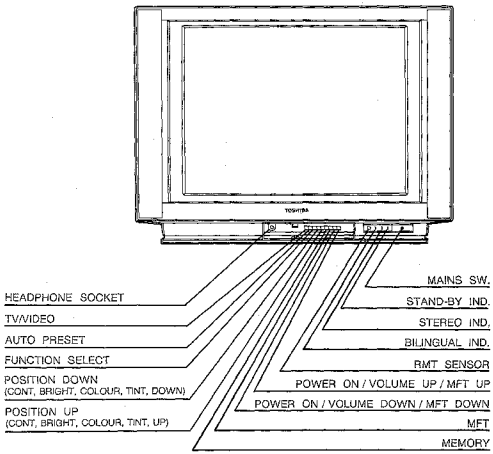
SAFETY PRECAUTION

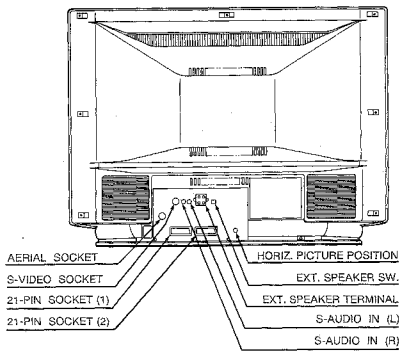
1. This receiver has a nominal working E.H.T. voltage of 24.0 kV. Extreme caution should be exercised when working on the receiver with the back removed.
   Do not attempt to service this receiver if you are not conversant with the precautions and procedures for working on high voltage equipment.
   When handling or working on the C.R.T., always discharge the anode to the receiver chassis before removing the anode cap.
   The C.R.T., if broken, will violently expel glass fragments. Use shatter proof goggles and take extreme care while handling.
   Do not hold the C.R.T. by the neck as this is a very dangerous practice.
2. It is essential that to maintain the safety of the customer all cable forms be replaced exactly as supplied from factory.
3. A small part of the chassis used in this receiver is, when operating, at approximately half mains potential at all times. It is therefore essential in the interest of safety that when serving or connecting any test equipment the receiver should be supplied via a suitable isolating transformer of adequate rating.
4. Replace blown fuses within the receiver with the fuse specified in the parts list.
5. When replacing wires or components to terminals or tags, wind the leads around the terminal before soldering. When replacing safety components identified by the international hazard symbols on the circuit diagram and parts list, it must be a Toshiba approved type and must be mounted as the original.
6. Keep wires away from high temperature components.

PRODUCT SAFETY NOTICE

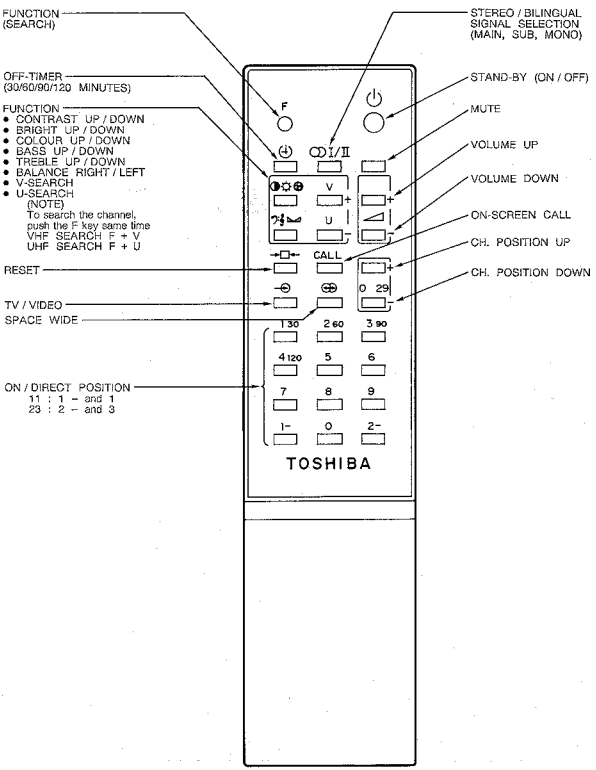
Many electrical and mechanical components in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the X-ray radiation protection afforded by them cannot necessarily be obtained by using replacements rated at higher voltages or wattage, etc. Components which have these special safety characteristics in this manual and its supplements are identified by the international hazard symbols on the schematic diagram and parts list. Before replacing any of these components read the parts list in this manual carefully. Substitute replacement components which do not have the same safety characteristics as specified in the parts list may create X-ray radiation.

FRONT CONTROLS AND REAR VIEWS





REMOTE HAND HELD UNIT



WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

INSTALLATION AND SERVICE ADJUSTMENTS

GENERAL INFORMATIONS

All adjustments are thoroughly checked and corrected when the receiver leaves the factory. Therefore the receiver should operate normally and produce proper colour and B/W pictures upon installation. However, several minor adjustments may be required depending on the particular location in which the receiver is operated.
This receiver is shipped completely in cardboard carton. Carefully draw out the receiver from the carton and remove all packing materials.
Plug the power cord into a convenient 220 volts 50 Hz AC two pin power outlet. Turn the receiver ON. Check and adjust all the customer controls such as BRIGHTNESS, CONTRAST and COLOUR Controls to obtain natural colour or B/W picture.

AUTOMATIC DEGAUSSING

A degaussing coil is mounted around the picture tube so that external degaussing after moving the receiver is normally unnecessary, providing the receiver is properly degaussed upon installation. The degaussing coil operates for about 1 second after the power to the receiver is switched ON. If the set is moved or faced in a different direction, the power switch must be switched off at least one hour in order that the automatic degaussing circuit operates properly. Should the chassis or parts of the cabinet become magnetized to cause poor colour purity, use an external degaussing coil. Slowly move the degaussing coil around the faceplate of the picture tube, the sides and front of the receiver and slowly withdraw the coil to a distance of about 2 m before disconnecting it from AC source.

HIGH VOLTAGE CHECK

CAUTION: There is no HIGH VOLTAGE ADJUSTMENT on this chassis.

1. Connect an accurate high voltage meter to the second anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST Controls to minimum (zero beam current).
3. High voltage will be measured below 27.5 kV.
4. Rotate the BRIGHTNESS Control to both extremes to be sure the high voltage does not exceed the limit of 27.5 kV under any conditions.

HEIGHT ADJUSTMENT

HEIGHT Control (R351) on MAIN Board changes the size of the picture or pattern, having an equal effect on the top and bottom. Make final adjustment to overscan the mask 2 cm at top and bottom.

HORIZONTAL CENTRE ADJUSTMENT

1. Receive the WG PHILIPS pattern.
2. Set the contrast and colour to minimum, and the bringhtness to maximum.
3. Adjust H. CENTRE USER Control (R452) to the click (centre) position.
4. Adjust H. CENTRE SUB Control (R451) so the pattern centre can be located at the screen centre.

FOCUS ADJUSTMENT

Adjust FOCUS Control on FLYBACK TRANS.(T461) for well defined scanning lines in the centre area on the screen.

DELAYED RF AGC ADJUSTMENT

1. Tune the set in the strongest station in your area.
2. Turn AGC DELAY Control (R151) on IF Board to fully counterclockwise position.
3. Adjust AGC DELAY Control clockwise until noise (snow) disappears on the screen.

PICTURE WIDTH AND DISTORTION ADJUSTMENT (Width, Pincushion Distortion, Trapezoid Distortion)

1. Perform this adjustment after +B and H. CENTRE adjustment are completed.
2. Receive the WG PHILIPS pattern.
3. Set the contrast and colour to minimum, and the brightness to maximum.
4. Adjust H. WIDTH Control (R358) for the horizontal width so that the white flags on left and right of the pattern are just hidden.
5. Adjust PINCUSHION CORRECTION Control (R357) to correct the vertical line on left and right straight.
6. Adjust TRAPEZOID CORRECTION Control (R356) to correct the trapezoid distortion.
7. Readjust H. WIDTH control for the precision.

BELL COIL (LM01) ADJUSTMENT

1. Receive SECAM colour bar signal.
2. Connect the synchroscope to the terminal Pin 2 of LM01.
3. Adjust LM01 for the flat level of amplitude in each colour bar waveform on the scope. (See figure 1.)

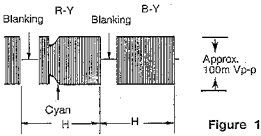


Figure 1.

IDENT COIL (LM04) ADJUSTMENT

1. Receive SECAM colour bar signal.
2. Connect the DC voltmeter (Digital Voltmeter) to the pin 23 of IC501.
3. Adjust LM04 for the maximum indication (approx. DC10V) on the meter.

B-Y, R-Y DEMOD COIL (LM02, LM03) ADJUSTMENT

1. Receive SECAM colour bar signal.
2. Set the COLOUR, BRIGHTNESS and CONTRAST Controls free.
3. Connect the synchroscope to the pin 62 of IC501.
4. Adjust LM02 so that the white level in picture part reaches to the vertical retrace line. (See figure 2.)
5. Then change the connection of synchroscope from the pin 62 to the pin 60 of IC501.
6. Adjust LM03 so that the white level in picture part reaches to the vertical retrace line. (See figure 3.)

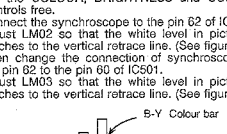


Figure 2.

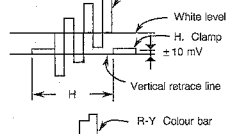


Figure 3.

PAL MATRIX ADJUSTMENT

1. Tune in the colour programme of the Philips pattern.
2. Set the COLOUR Control to obtain the proper colour.
3. If the PAL MATRIX adjustment is incorrect, the Venetian Blind would appear in the colour bars area. This case needs the adjustment.
4. At the first, adjust DL PHASE ADJ. Coil (L551) to minimize the Venetian Blind.
5. Next adjust 1H-DL ADJ. VR (R551) to minimize the Blind.
6. If the Venetian Blind still remains, adjust 1H-DL PHASE ADJ. Coil (L551) to minimize the Blind again.
7. Repeat the item 5 and 6 procedures, adjust the R551 and L551 until the Blind does not appear.

CRT GREY SCALE ADJUSTMENT

1. Tune in an active channel.
2. Turn the SCREEN Control (on T461) fuly counter-clockwise.
3. By rotating the RED, GREEN and BLUE CUT OFF Controls (R557, R558, R559) counterclockwise to the minimum.
4. Set the GREEN and BLUE DRIVE Controls (R252, R253) to the mid position.
5. Set the SERVICE SW. (S202) in the H. line posiiton.
6. Short temporarily Terminal of RASTER CHIP on the CRT DRIVE Board.
7. Set the CONTRAST, COLOUR Controls to minimum and BRIGHTNESS Control to centre position.
8. Rotate the SCREEN Control gradually clockwise until the first line appears slightly on the screen. Set the SCREEN Control to this position.
9. Open the terminal of RASTER CHIP on the CRT DRIVE Board.
10. Adjust the CUT OFF Controls to obtain the slightly lighted horizontal lines in the same levels of three colours (RED, GREEN and BLUE).
    The lines may look like white if the CUT OFF Controls are adjusted properly.
11. Return the SERVICE SW. (S202) in the Receiving position.
12. Set the BRIGHTNESS Control to the maximum and COLOUR Control to the minimum.
13. Adjust the BLUE and GREEN DRIVE Controls (R252/R253) to obtain proper white-balanced picture in high light areas.
14. Set the BRIGHTNESS and CONTRAST Controls to obtain dark grey raster. Then check the white balance in low brightness. If the white balance is not proper, retouch the CUT OFF Controls and DRIVE Controls to obtain a good white balance in both low and high light areas.

SUB-BRIGHTNESS ADJUSTMENT

1. Tune in a colour programme.
2. Set the CONTRAST Control to the maximum and the BRIGHTNESS Control to the centre.
3. Set the COLOUR Control to the minimum.
4. Set the SUB-BRIGHT. Control (R255) to the centre and leave the receiver for five minutes in this state.
5. Watching the picture well, adjust the SUB-BRIGHT. Control in the position where the picture does not show evidence of blooming in high bright area and not appear too dark in low bright portion.
6. Check the proper picture variation by rotating the CONTRAST and BRIGHTNESS Controls to both extremes.
7. If the picture does not appear dark with the CONTRAST and BRIGHTNESS Controls turned to the minimum, or not appear bright with the controls turned to the maximum, adjust the SUB-BRIGHT. Control again for the acceptable picture.

PICTURE I-F SWEEP ALIGNMENT

GENERAL ..... Refer to figure 4 for test equipment connection.
PRELIMINARY STEPS ..... 1. Supply +12 volts to the IF Board.
2. Connect the detector to pin 1 of IC101.
3. Short pin 29 of IC101 to ground.
SWEEP/MARKER GENERATOR..... Connect to pin 2 of P101 as shown in figure 4 on the IF Board.
Set to 30~40 MHz sweep with signal level of 75~85 dBμ
OSCILLOSCOPE ..... Connect through the detector probe to the pin 1 of IC101 on the IF Board.

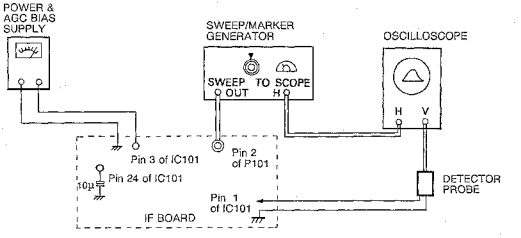


Figure 4. Picture I-F Sweep Alignment

STEP	SWEEP/MARKER GENERATOR	ADJUST	REMARKS
1. Detector Coil	38.9MHz Marker "ON"	L151	• Short the base of QN08 to ground. • Supply +2 to +3 volts to pin 3 of IC101 to set the output level for 0.4 Vp-p on the scope. • Adjust L151 so that the marker position (38.8 MHz) on the response can lower to minimum. (See figure 5.) • Remove the short of QN08 base. • After completing CN51 adjustment, repeat this step again.
2. Detector Capacitor	34.47MHz Marker "ON"	CN51	• Short the collector of QN08 to ground. • Supply +2 to +3 volts to pin 3 of IC101 to set the detection output for 0.4 Vp-p on the scope. • Adjust CN51 so that the marker position (34.47 MHz) on the response can lower to minimum. (See figure 5.) • Remove the short of QN08 base. • After completing L151 adjustment, repeat this step again.
After completing the above steps, disconnect the equipment and re-solder the links on the Main Board, and adjust the AGC Delay control (R153) following DELAYED RF AGC ADJUSTMENTS.			

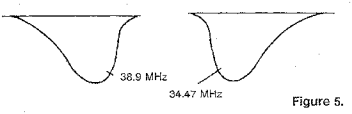


Figure 5. Magnified Response Curve

AFC ALIGNMENT

GENERAL ..... Refer to figure 6 for test equipment connection.
PRELIMINARY STEPS ..... 1. Disconnect the IF Board from the Main Board.
2. Disconnect the solder link on the foil side of IF Board.
3. Supply +12 volts to the IF Board. (See figure 6.)
4. Short pin 29 of IC101 to ground.
5. Turn AGC DELAY Control (R153) on the Main Board fully clockwise.
DVM ..... Connect to the resistor R125 (ⓔ in figure 6) and ground.

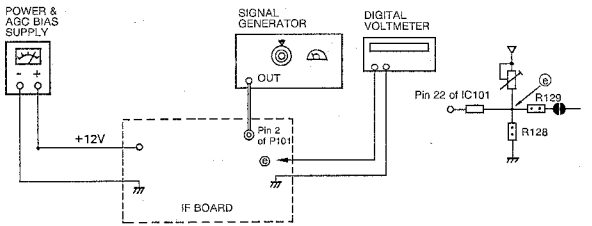


Figure 6. AFC Alignment

STEP	SIGNAL GENERATOR	ADJUST	REMARKS
1. AFC Balance (R153)	NO SIGNAL	R153	• Short the pin 3 of IC101 to ground. • Adjust R153 for 4.5volts at the point ⓔ in figure 6.
2. AFC Coil (L153)	38.9 MHz CARRIER WAVE (Level: 75 to 85 dBμ)	L153	• Remove the short of pin 3 of IC101. • Short the base of QN08 to ground. • Connect IF carrier wave to the pin 2 of P101 in figure 6. • Adjust L153 for 2.5 volts on the meter at the point ⓔ. • After completing L152 adjustment, repeat this step again.
3. AFC Capacitor (L152)	34.47 MHz CARRIER WAVE (Level: 75 to 85 dBμ)	L152	• Remove the short of QN08 base. • Short the collector of QN08 to ground. • Connect IF carrier wave to pin 2 of P101 in figure 6. • Adjust L152 for 2.5 volts on the meter at the point ⓔ. • After completing L153 adjustment, repeat this step again.

SECAM DET-OUT & SOUND IF ALIGNMENT

L SECAM DET-OUT (R152) ADJUSTMENT

1. Disconnect the IF Board from the Main Board.
2. Supply +12 V to the IF Board.
3. Set AGC to Self AGC condition.
4. Connect synchroscope to the emitter of Q103 through 10:1 probe.
5. Connect the 2-signal generator to IF input, and set up the generator as described below.
   IF frequency : 38.9 MHz
   Signal level : 75 to 85 dBμ
   Video modulation
   Positive modulation : 97%
   Video signal fH : 15.625 kHz
   Picture : Pattern with 100% white
6. Adjust the AC LEVEL Control (R152) for 2.0Vp-p on the scope.

PAL SIF DET (L651) ADJUSTMENT

1. Short the base of QN06 to ground.
2. Connect SIF generator to pin 17 of IC602 through 0.01 μF capacitor.
3. Connect the oscilloscope to pin 7 of IC602.
4. Set up the SIF generator as described below.
   Sound carrier frequency : 6.0 MHz
   Modulation frequency : 1000 Hz
   Frequency deviation : ±15 kHz
   Signal level : 80 dBμ (50 ohm load)
5. Adjust L651 for the maximum response of 1000 Hz det-out on scope.

SECAM SOUND DET (L652) ADJUSTMENT

1. Short the base of QN06 to ground.
2. Connect the SIF generator to pin 3 of IC602 through 0.01μF capacitor.
3. Connect the oscilloscope to pin 14 of IC602.
4. Set up the SIF generator as described below.
   Sound carrier frequency : 5.74 MHz
   Modulation frequency : 1000 Hz
   Frequency deviation : ±15 kHz
   Signal level : 80 dBμ (50 ohm load)
5. Adjust L652 for the maximum response of 1000 Hz det-out on scope.

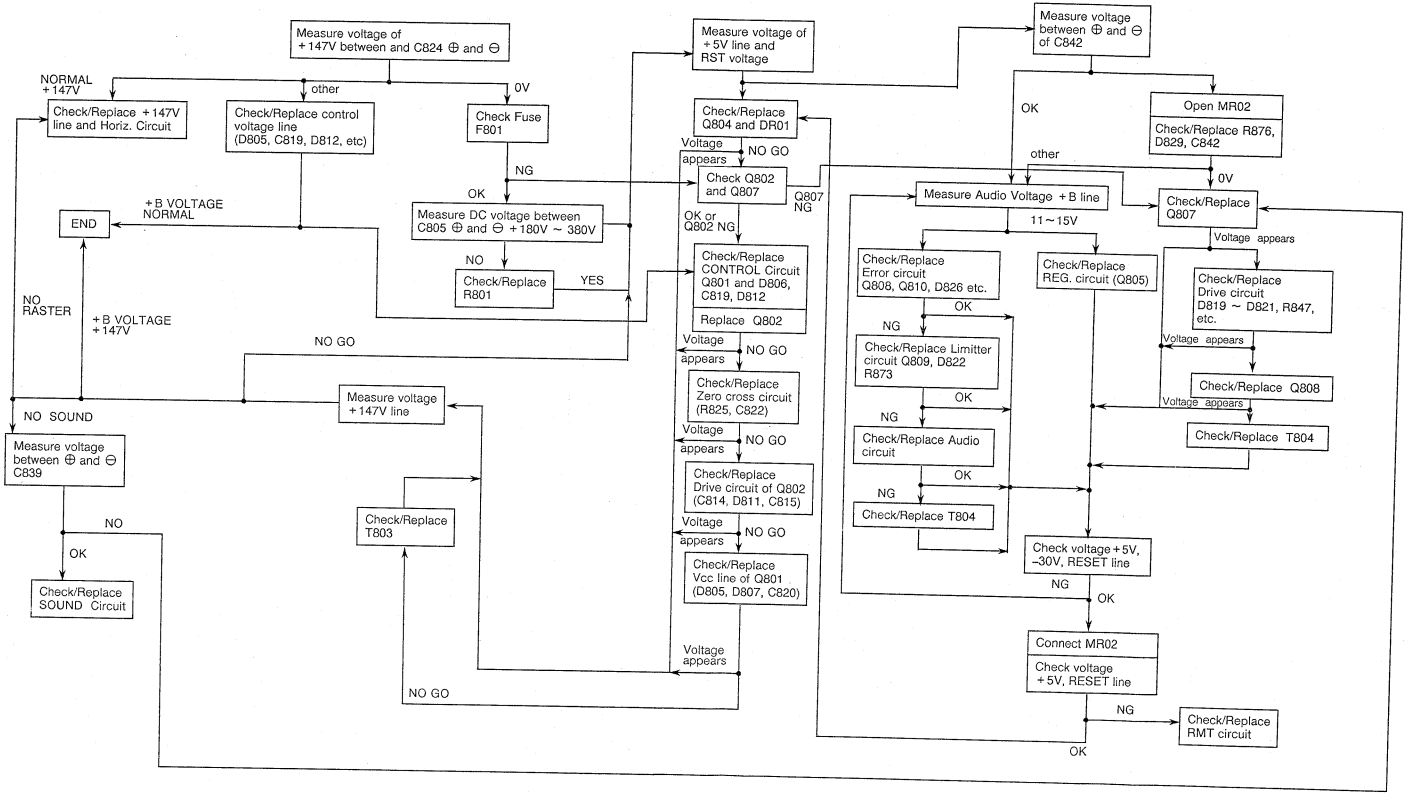
SIF & MPX ALIGNMENT

STEP	ADJUSTING PARTS	INPUT TERMINAL	OUTPUT TERMINAL	TEST SIGNAL	PROCEDURE
1	54.7 kHz PILOT ADJ. (LG01)	PIN 21 (ICG01)	Pin 19 (ICG01)	Pilot Signal Input level: 100mVp-p f = 54.69 kHz	1. Arrange the signal as described left. 2. Connect oscilloscope to pin 19 of ICG01. 3. Adjust LG01 for the maximum amplitude of 54.69 kHz element.
2	STEREO SEPARATION (RG51)	Aerial	PIN 2 (ICG01)	ON AIR SIGNAL (Stereo) S1: fm = 1 kHz Δf = ± 15 kHz S2: fm = 1 kHz Δf = ± 30 kHz LEFT CH.: No modulation INPUT LEVEL: 80 to 100dBμ	1. Receive ON-AIR stereo signal. 2. Connect oscilloscope to pin 2 of ICG01. 3. Adjust RG51 for the minimum amplitude of 1 kHz element.
3	6.0 MHz SIF CONVERT (L662)	PIN 5 (IC661)	POINT (Between CD10 and Z666)	Input level: 80 to 100 dBμ f = 5.5 MHz fm = 1 kHz Δf = ± 15 kHz	1. Connect the signal to pin 5 of IC661 on MPX Board through a capacitor 0.01 uF. 2. Connect oscilloscope to the intersection of CD10 and Z666. 3. Adjust L662 for the maximum amplitude of 6.0 MHz.

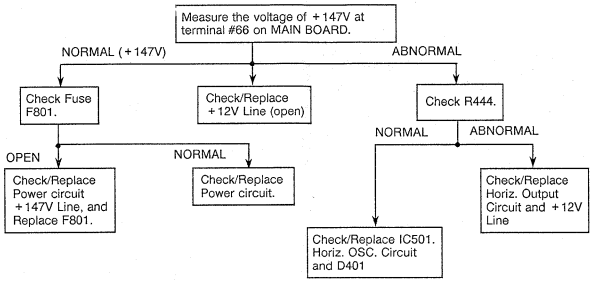
TROUBLESHOOTING CHARTS

The following charts are devoted to troubleshooting which, if followed carefully, will assist you in tracking down a fault to the correct stage.
In order to utilize the charts (fault trees), firstly establish the complaint, i.e. – No Raster, No Sound.
Locate the chart applicable and then progress through the various alternatives until a final block indicates the offending components or stage.

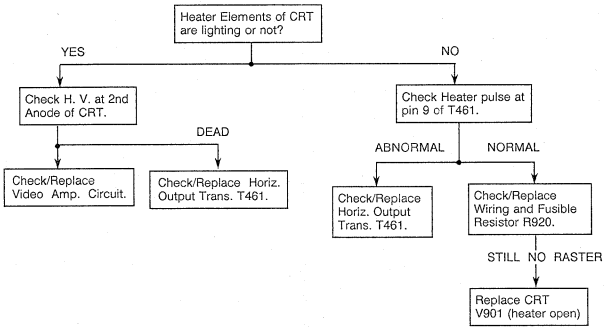
1. NO RASTER AND NO SOUND



2. NO RASTER (NOISE OR WEAK SOUND)

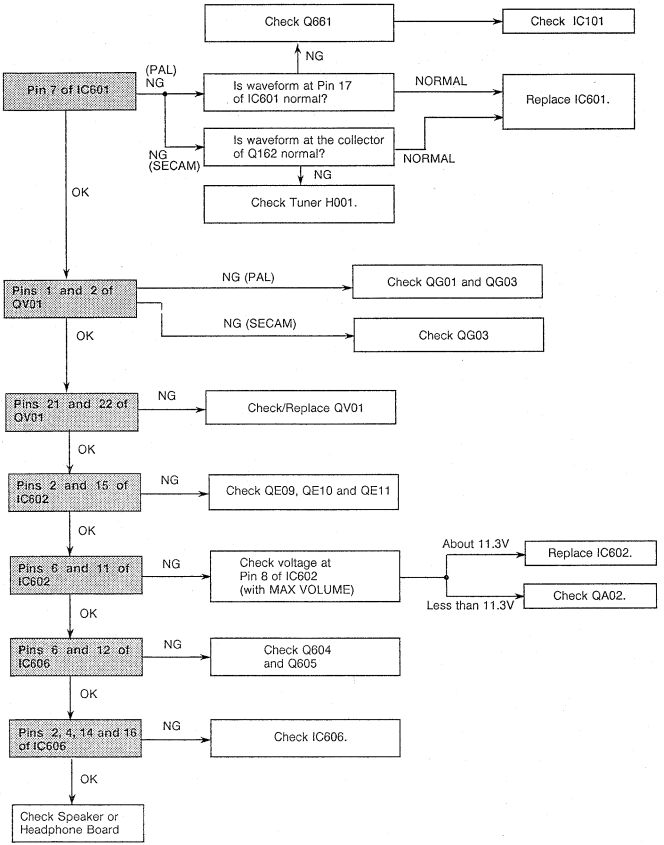


3. NO RASTER (SOUND OK)



4. NO SOUND

NOTE: Check the sound signal waveform for shaded area below.



5. NO PICTURE

Check video signal waveform for shaded area below.

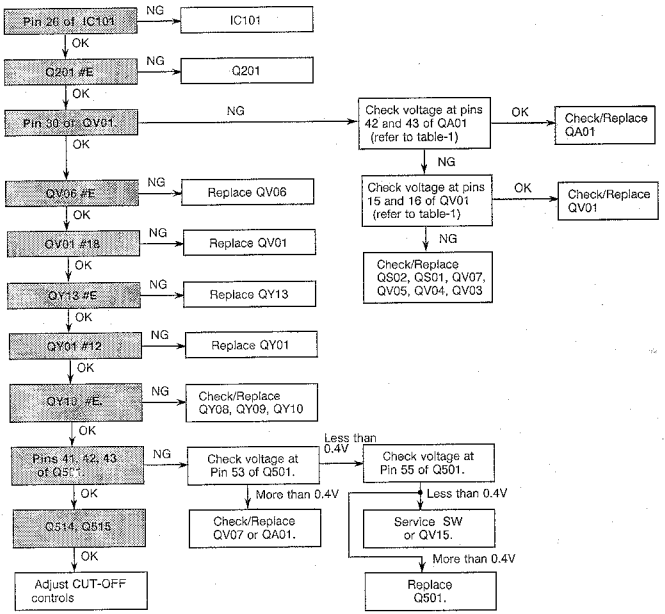


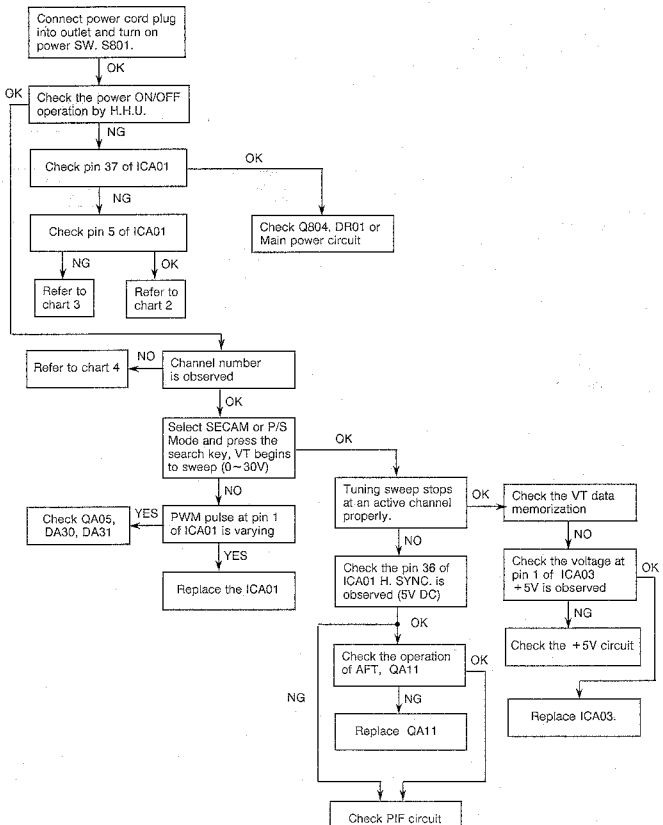
Table-1 (A/V SW. logic)

MODE	QA01		QV01		Discription of (L) or (H)
	Pin 42	Pin 43	Pin 15	Pin 16	
TV-1	H	H	H	H(L)	When pin 8 of 21-PIN is High Level
TV-2	L	H	H(L)	H(L)	When pin 8 of 21-PIN is High Level
VIDEO-1	H	L	H	L	
VIDEO-2	L	L	L	L(H)	When the S-Socket is inserted

L : Less than 2.5V
H : More than 2.5V

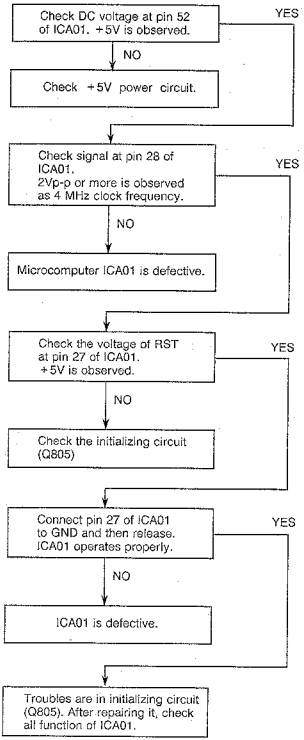
6. CHANNEL SELECTOR TROUBLE

[CHART 1]



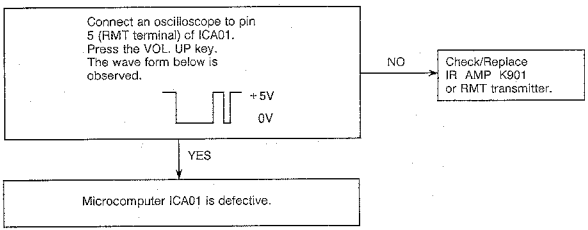
[CHART 2] Microcomputer (ICA01) Operation Check

NOTE: Before checking Microcomputer, check that control buttons and their connection work properly.

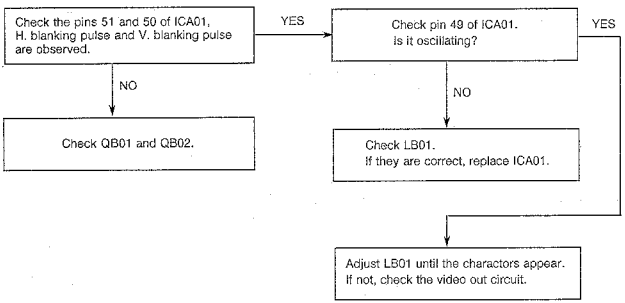


[CHART 3] Remote Control Operation Check

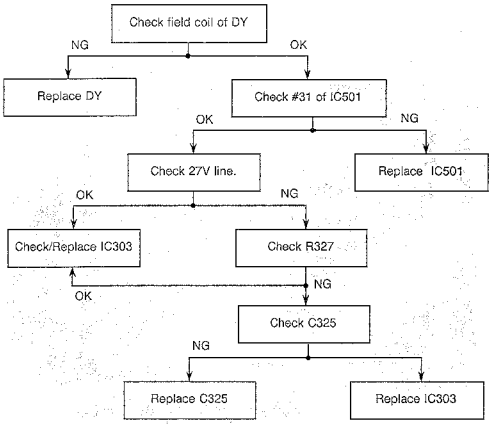
Note : Before checking RMT operation, check that key operation on TV set is proper.



[CHART 4] On Screen Display Operation Check



7. NO VERT. SCAN (ONE HORIZ. LINE RASTER)



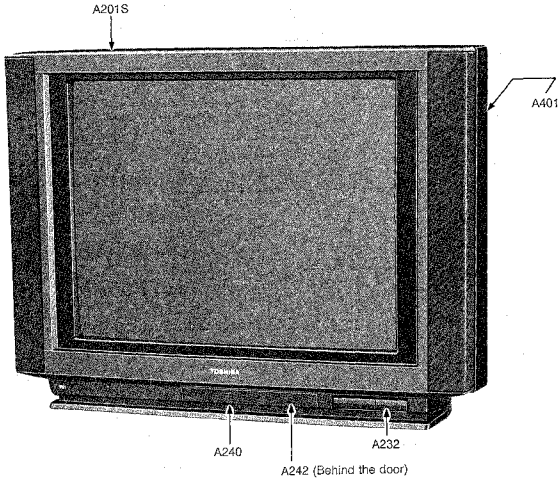
8. OUT OF VERT. SYNC. AND HORIZ. SYNC.

Check/Replace Sync Circuit pin 33 of IC501.

9. OUT OF HORIZ. SYNC.

Check/Replace Horiz. OSC Circuit and Horiz. AFC Circuit connected to Pins 36, 37 and 38 of IC501.
Check/Replace IC501.

CABINET REPLACEMENT PARTS LIST



Location No.	Part No.	Description
A201S	23418420	Front Cover
A232	23443194	Knob, (POWER)
A237	70368125	Push Catch for Door
A242	23443196	Knob, (IN DOOR)
A401	23422373	Back Cover
A411	23998392	Label, Model No., B/C
A701	23523170	Carton Box
A702	23934294	Packing, Bottom
A703	23934295	Packing, Top
A710	23998393	Label, Model No., Carton
Y101	23994653	Owner's Manual

CHASSIS REPLACEMENT PARTS LIST

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

CAUTION: The international hazard symbols in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2. Do not degrade the safety of the receiver through improper servicing.

NOTICE: The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.

ABBREVIATIONS:

Capacitors.....	CD	:	Ceramic Disk	PF	:	Plastic Film	EL	: Electrolytic
Resistors.....	CF	:	Carbon Film	CC	:	Carbon Composition	MF	: Metal Film
	OMF	:	Oxide Metal Film	VR	:	Variable Resistor	FR	: Fusible Resistor

(All CD and PF capacitors are ±5%, 50V and all resistors, ±5%, 1/6W unless otherwise noted.)

Location No.	Part No.	Description
CAPACITORS		
C101	24212102	CD, 1000pF, ±10%
C102	24212102	CD, 1000pF, ±10%
C104	24636220	EL, 22μF, 50V
C105	24232103	CD, 0.01μF, +80%, −20%
C106	24636229	EL, 2.2μF, 50V
C107	24550473	PF, 0.047μF, 63V
C108	24707474	Tantalum, 0.47μF, ±20%, 35V
C109	24232103	CD, 0.01μF, +80%, −20%
C110	24232103	CD, 0.01μF, +80%, −20%
C111	24636229	EL, 2.2μF, 50V
C112	24436330	CD, 33pF
C113	24636478	EL, 0.47μF, 50V
C114	24633470	EL, 47μF, 16V
C115	24232103	CD, 0.01μF, +80%, −20%
C116	24232103	CD, 0.01μF, +80%, −20%
C117	24085029	EL, 4.7μF, 16V, Non-Polar
C119	24232103	CD, 0.01μF, +80%, −20%
C120	24212222	CD, 2200pF, ±10%
C121	24085988	EL, 1μF, ±20%, 50V, Non-Polar
C122	24550153	PF, 0.015μF, 63V
C123	24636478	EL, 0.47μF, 50V
C124	24794101	EL, 100μF, 16V
C125	24232103	CD, 0.01μF, +80%, −20%
C126	24212152	CD, 1500pF, ±10%
C161	24212102	CD, 1000pF, ±10%
C162	24212102	CD, 1000pF, ±10%
C163	24212102	CD, 1000pF, ±10%
C164	24232103	CD, 0.01μF, +80%, −20%
C165	24212102	CD, 1000pF, ±10%
C166	24212102	CD, 1000pF, ±10%
C169	24232103	CD, 0.01μF, +80%, −20%
C170	24212102	CD, 1000pF, ±10%
C201	24636100	EL, 10μF, 50V
C202	24795101	EL, 100μF, 25V
C203	24232103	CD, 0.01μF, +80%, −20%
C204	24797220	EL, 22μF, 50V
C205	24636478	EL, 0.47μF, 50V
C208	24212102	CD, 1000pF, ±10%

Location No.	Part No.	Description
C209	24232103	CD, 0.01μF, +80%, −20%
C210	24636100	EL, 10μF, 50V
C211	24636100	EL, 10μF, 50V
C240	24550474	PF, 0.47μF, 63V
C301	24636229	EL, 2.2μF, 50V
C302	24212152	CD, 1500pF, ±10%
C303	24617891	EL, 1μF, ±10%, 50V
C304	24212102	CD, 1000pF, ±10%
C307	24232103	CD, 0.01μF, +80%, −20%
C312	24212681	CD, 680pF, ±10%
C313	24796221	EL, 220μF, 35V
C314	24796222	EL, 2200μF, 35V
C315	24214221	CD, 220pF, ±10%, 500V
C316	24795222	EL, 2200μF, 25V
C317	24617997	EL, 2.2μF, ±10%, 50V
C321	24435510	CD, 51pF, 500V
C322	24550564	PF, 0.56μF, 63V
C327	24082027	PF, 0.22μF, ±10%, 100V
C328	24693272	PF, 2700pF, 100V
C360	24095945	PF, 0.47μF, 200V
C362	24212821	CD, 820pF, ±10%
C363	24095824	PF, 0.27μF, 200V
C364	24212471	CD, 470pF, ±10%
C365	24798470	EL, 47μF, 100V
C366	24550182	PF, 1800pF, 63V
C367	24550223	PF, 0.022μF, 63V
C368	24550104	PF, 0.1μF, 63V
C370	24593822	PF, 8200pF
C371	24828683	PF, 0.068μF, 200V
C372	24550474	PF, 0.47μF, 63V
C402	24353271	CD, 270pF
C403	24636339	EL, 3.3μF, 50V
C405	24593203	PF, 0.02μF
C406	24593203	PF, 0.02μF
C407	24593243	PF, 0.024μF
C408	24794101	EL, 100μF, 16V
C409	24232103	CD, 0.01μF, +80%, −20%
C412	24550182	PF, 1800pF, 63V
C413	24550182	PF, 1800pF, 63V
C414	24212471	CD, 470pF, ±10%
C416	24214271	CD, 270pF, ±10%, 500V

Location No.	Part No.	Description
C417	24214332	CD, 3300pF, ±10%, 500V
C418	24790100	EL, 10μF, ±20%, 160V
C423	24232103	CD, 0.01μF, +80%, −20%
C424	24795470	EL, 47μF, 25V
C425	24794101	EL, 100μF, 16V
⚠ C440	24095888	PF, 0.01μF, ±3%, 1600V
C441	24214221	CD, 220pF, ±10%, 500V
C443	24214221	CD, 220pF, ±10%, 500V
C445	24828563	PF, 0.056μF, 200V
⚠ C446	24829243	PF, 0.024μF, 400V
C447	24644479	EL, 4.7μF, 250V
C448	24795102	EL, 1000μF, 25V
C449	24794471	EL, 470μF, 16V
C451	24640962	EL, 33μF, ±20%, 200V
⚠ C463	24212222	CD, 2200pF, ±10%
⚠ C464	24092035	CD, 1800pF, ±10%, 2kV
C465	24095942	PF, 0.62μF, 200V
C466	24640933	EL, 1μF, ±20%
C501	24797220	EL, 22μF, 50V
C505	24593273	PF, 0.027μF
C506	24593273	PF, 0.027μF
C507	24593103	PF, 0.01μF
C508	24085028	EL, 2.2μF, 25V, Non-Polar
C509	24353330	CD, 33pF
C510	24232103	CD, 0.01μF, +80%, −20%
C511	24232103	CD, 0.01μF, +80%, −20%
C512	24353200	CD, 20pF
C515	24636010	EL, 1μF, 50V
C516	24550104	PF, 0.1μF, 63V
C517	24550104	PF, 0.1μF, 63V
C518	24232103	CD, 0.01μF, +80%, −20%
C519	24232103	CD, 0.01μF, +80%, −20%
C520	24636229	EL, 2.2μF, 50V
C521	24550474	PF, 0.47μF, 63V
C522	24550474	PF, 0.47μF, 63V
C523	24550474	PF, 0.47μF, 63V
C524	24232103	CD, 0.01μF, +80%, −20%
C530	24796220	EL, 22μF, 35V
C531	24633100	EL, 10μF, 16V
C532	24436390	CD, 39pF
C533	24436270	CD, 27pF
C534	24436220	CD, 22pF
C535	24636100	EL, 10μF, 50V
C536	24636478	EL, 0.47μF, 50V
C537	24794101	EL, 100μF, 16V
C539	24232103	CD, 0.01μF, +80%, −20%
C601	24212102	CD, 1000pF, ±10%
C603	24232103	CD, 0.01μF, +80%, −20%
C604	24797470	EL, 47μF, 50V
C605	24598821	PF, 820pF
C606	24598911	PF, 910pF
C607	24550104	PF, 0.1μF, 63V
C608	24636100	EL, 10μF, 50V
C609	24232103	CD, 0.01μF, +80%, −20%
C610	24232103	CD, 0.01μF, +80%, −20%
C611	24232103	CD, 0.01μF, +80%, −20%
C612	24436470	CD, 47pF
C613	24436470	CD, 47pF
C615	24636479	EL, 4.7μF, 50V
C616	24636229	EL, 2.2μF, 50V
C617	24636479	EL, 4.7μF, 50V
C618	24636479	EL, 4.7μF, 50V
C619	24794470	EL, 47μF, 16V
C620	24530103	PF, 0.01μF, ±10%, 63V

Location No.	Part No.	Description
C621	24550563	PF, 0.056μF, 63V
C622	24530103	PF, 0.01μF, ±10%, 63V
C623	24550563	PF, 0.056μF, 63V
C624	24636100	EL, 10μF, 50V
C625	24794470	EL, 47μF, 16V
C626	24550104	PF, 0.1μF, 63V
C627	24636478	EL, 0.47μF, 50V
C628	24530102	PF, 1000pF, ±10%, 63V
C629	24530102	PF, 1000pF, ±10%, 63V
C631	24794101	EL, 100μF, 16V
C632	24591473	PF, 0.047μF
C634	24794101	EL, 100μF, 16V
C635	24591473	PF, 0.047μF
C636	24636010	EL, 1μF, 50V
C637	24636010	EL, 1μF, 50V
C638	24795102	EL, 1000μF, 25V
C639	24550104	PF, 0.1μF, 63V
C640	24550104	PF, 0.1μF, 63V
C641	24550104	PF, 0.1μF, 63V
C642	24636100	EL, 10μF, 50V
C643	24795470	EL, 47μF, 25V
C644	24550104	PF, 0.1μF, 63V
C645	24550104	PF, 0.1μF, 63V
C647	24634220	EL, 22μF, 25V
C649	24636478	EL, 0.47μF, 50V
C660	24795101	EL, 100μF, 25V
C661	24795101	EL, 100μF, 25V
C663	24436470	CD, 47pF
C664	24436470	CD, 47pF
C665	24232103	CD, 0.01μF, +80%, −20%
C666	24353680	CD, 68pF
C667	24436471	CD, 470pF
C668	24436471	CD, 470pF
C669	24232103	CD, 0.01μF, +80%, −20%
C671	24212102	CD, 1000pF, ±10%
C674	24797470	EL, 47μF, 50V
C675	24232103	CD, 0.01μF, +80%, −20%
C683	24232103	CD, 0.01μF, +80%, −20%
C699	24636479	EL, 4.7μF, 50V
⚠ C801	24098999	PF, 0.1μF, ±20%, AC250V
⚠ C802	24098999	PF, 0.1μF, ±20%, AC250V
C803	24092281	CD, 4700pF, ±20%, AC250V
C804	24092281	CD, 4700pF, ±20%, AC250V
C805	24092281	CD, 4700pF, ±20%, AC250V
C806	24092281	CD, 4700pF, ±20%, AC250V
C810	24086915	EL, 270μF, 450V
C811	24436101	CD, 100pF
C813	24550682	PF, 6800pF, 63V
C814	24797470	EL, 47μF, 50V
C815	24212102	CD, 1000pF, ±10%
C816	24442331	CD, 330pF, ±10%, 2kV
C818	24095914	PF, 2200pF, ±3%, 1600V
C819	24636010	EL, 1μF, 50V
C820	24797101	EL, 100μF, 50V
C821	24436331	CD, 330pF
C822	24550822	PF, 8200pF, 63V
C823	24442181	CD, 180pF, ±10%, 2kV
C824	24086945	EL, 330μF, ±20%, 200V
C826	24214331	CD, 330pF, ±10%, 500V
C827	24795222	EL, 2200μF, 25V
C829	24636100	EL, 10μF, 50V
C831	24820683	PF, 0.068μF, 630V
C832	24442331	CD, 330pF, ±10%, 2kV
C833	24550104	PF, 0.1μF, 63V

Location No.	Part No.	Description
C834	24560383	PF, 0.039μF, 63V
C835	24442221	CD, 220pF, ±10%, 2kV
C836	24636100	EL, 10μF, 50V
C837	24636100	EL, 10μF, 50V
C838	24214181	CD, 180pF, ±10%, 500V
C839	24795332	EL, 3300μF, 25V
C840	24795332	EL, 3300μF, 25V
C842	24795331	EL, 330μF, 25V
C843	24232103	CD, 0.01μF, +80%, −20%
C845	24797220	EL, 22μF, 50V
⚠ C883	24094655	CD, 1000pF, ±20%, AC400V
⚠ C884	24094655	CD, 1000pF, ±20%, AC400V
⚠ C885	24094656	CD, 2200pF, ±20%, AC400V
C901	24644010	EL, 1μF, 250V
C902	24095981	PF, 2200pF, 1600V
CA01	24794470	EL, 47μF, 16V
CA02	24232103	CD, 0.01μF, +80%, −20%
CA03	24633100	EL, 10μF, 16V
CA05	24232103	CD, 0.01μF, +80%, −20%
CA06	24436300	CD, 30pF
CA07	24436300	CD, 30pF
CA08	24436101	CD, 100pF
CA12	24707225	Tantalum, 2.2μF, ±20%, 35V
CA14	24636479	EL, 4.7μF, 50V
CA15	24636479	EL, 4.7μF, 50V
CA16	24636479	EL, 4.7μF, 50V
CA19	24212102	CD, 1000pF, ±10%
CA20	24436391	CD, 390pF
CA21	24436221	CD, 220pF
CA22	24550104	PF, 0.1μF, 63V
CA23	24550104	PF, 0.1μF, 63V
CA24	24550104	PF, 0.1μF, 63V
CA25	24636229	EL, 2.2μF, 50V
CA26	24232103	CD, 0.01μF, +80%, −20%
CA27	24232103	CD, 0.01μF, +80%, −20%
CA28	24636100	EL, 10μF, 50V
CA32	24550104	PF, 0.1μF, 63V
CA33	24636010	EL, 1μF, 50V
CA34	24232103	CD, 0.01μF, +80%, −20%
CA35	24212222	CD, 2200pF, ±10%
CA36	24232103	CD, 0.01μF, +80%, −20%
CA37	24794470	EL, 47μF, 16V
CA38	24636100	EL, 10μF, 50V
CA40	24794102	EL, 1000μF, 16V
CB01	24436101	CD, 100pF
CE09	24636010	EL, 1μF, 50V
CE11	24636100	EL, 10μF, 50V
CE12	24085991	EL, 1μF, ±20%, 25V, Non-Polar
CE14	24636478	EL, 0.47μF, 50V
CE15	24633100	EL, 10μF, 16V
CE16	24550224	PF, 0.22μF, 63V
CE17	24085991	EL, 1μF, ±20%, 25V, Non-Polar
CF80	24634220	EL, 22μF, 25V
CF82	24797331	EL, 330μF, 50V
CG01	24633100	EL, 10μF, 16V
CG02	24212102	CD, 1000pF, ±10%
CG03	24794101	EL, 100μF, 16V
CG04	24794101	EL, 100μF, 16V
CG05	24633100	EL, 10μF, 16V
CG06	24794101	EL, 100μF, 16V
CG07	24794101	EL, 100μF, 16V

Location No.	Part No.	Description
CG09	24550103	PF, 0.01μF, 63V
CG10	24550103	PF, 0.01μF, 63V
CG11	24794470	EL, 47μF, 16V
CG12	24794470	EL, 47μF, 16V
CG13	24550474	PF, 0.47μF, 63V
CG15	24550474	PF, 0.47μF, 63V
CG16	24550224	PF, 0.22μF, 63V
CG17	24550104	PF, 0.1μF, 63V
CG19	24794101	EL, 100μF, 16V
CG20	24232103	CD, 0.01μF, +80%, −20%
CG21	24232103	CD, 0.01μF, +80%, −20%
CG22	24232103	CD, 0.01μF, +80%, −20%
CG23	24232103	CD, 0.01μF, +80%, −20%
CG24	24085991	EL, 1μF, ±20%, 25V, Non-Polar
CG25	24085991	EL, 1μF, ±20%, 25V, Non-Polar
CG26	24436151	CD, 150pF
CG27	24085023	EL, 10μF, 16V, Non-Polar
CG28	24636100	EL, 10μF, 50V
CH01	24636010	EL, 1μF, 50V
CH02	24636010	EL, 1μF, 50V
CH03	24636010	EL, 1μF, 50V
CH05	24636100	EL, 10μF, 50V
CH06	24232103	CD, 0.01μF, +80%, −20%
CH10	24636010	EL, 1μF, 50V
CH11	24636010	EL, 1μF, 50V
CH12	24636010	EL, 1μF, 50V
CH13	24763471	EL, 470μF, ±20%, 16V
CH14	24763471	EL, 470μF, ±20%, 16V
CH15	24636100	EL, 10μF, 50V
CH17	24636100	EL, 10μF, 50V
CM01	24436221	CD, 220pF
CM02	24436221	CD, 220pF
CM05	24232103	CD, 0.01μF, +80%, −20%
CM06	24357270	CD, 27pF
CM07	24593273	PF, 0.027μF
CM08	24232103	CD, 0.01μF, +80%, −20%
CM09	24232103	CD, 0.01μF, +80%, −20%
CM99	24436270	CD, 27pF
CN09	24232103	CD, 0.01μF, +80%, −20%
CN10	24436101	CD, 100pF
CN11	24353080	CD, 8pF, ±0.25pF
CN12	24436360	CD, 36pF
CN13	24232103	CD, 0.01μF, +80%, −20%
CN14	24436150	CD, 15pF
CN16	24212102	CD, 1000pF, ±10%
CN17	24212102	CD, 1000pF, ±10%
CN19	24353120	CD, 12pF
CN20	24232103	CD, 0.01μF, +80%, −20%
CN21	24353220	CD, 22pF
CN22	24232103	CD, 0.01μF, +80%, −20%
CN51	24094959	Variable Capacitor, 2 to 12pF, 50V
CS01	24636100	EL, 10μF, 50V
CS02	24636100	EL, 10μF, 50V
CS03	24636100	EL, 10μF, 50V
CS04	24636010	EL, 1μF, 50V
CV01	24636100	EL, 10μF, 50V
CV02	24636100	EL, 10μF, 50V
CV03	24636100	EL, 10μF, 50V
CV09	24636100	EL, 10μF, 50V
CV10	24636100	EL, 10μF, 50V
CV11	24636100	EL, 10μF, 50V

Location No.	Part No.	Description
CV12	24636100	EL, 10μF, 50V
CV13	24636100	EL, 10μF, 50V
CV14	24636100	EL, 10μF, 50V
CV15	24633100	EL, 10μF, 16V
CV16	24636010	EL, 1μF, 50V
CV17	24232103	CD, 0.01μF, +80%, −20%
CV18	24232103	CD, 0.01μF, +80%, −20%
CV19	24763101	EL, 100μF, ±20%, 16V
CV20	24232103	CD, 0.01μF, +80%, −20%
CV21	24212471	CD, 470pF, ±10%
CV22	24212471	CD, 470pF, ±10%
CX02	24550104	PF, 0.1μF, 63V
CX03	24550104	PF, 0.1μF, 63V
CX04	24550104	PF, 0.1μF, 63V
CY01	24636479	EL, 4.7μF, 50V
CY02	24436101	CD, 100pF
CY03	24436271	CD, 270pF
CY04	24436271	CD, 270pF
CY05	24636479	EL, 4.7μF, 50V
CY06	24436101	CD, 100pF
CY07	24436101	CD, 100pF
CY08	24436101	CD, 100pF
CY09	24436331	CD, 330pF
CY10	24436221	CD, 220pF
CY11	24436221	CD, 220pF
CY12	24232103	CD, 0.01μF, +80%, −20%
CY13	24636100	EL, 10μF, 50V
CY14	24550334	PF, 0.33μF, 63V
CY15	24797220	EL, 22μF, 50V
CY16	24636100	EL, 10μF, 50V
CY17	24636479	EL, 4.7μF, 50V
CY18	24212102	CD, 1000pF, ±10%
CY19	24636100	EL, 10μF, 50V

RESISTORS

Location No.	Part No.	Description
R101	24366122	CF, 1200 ohm
R102	24366124	CF, 120k ohm
R103	24366222	CF, 2200 ohm
R104	24366332	CF, 3300 ohm
R105	24366153	CF, 15k ohm
R106	24366104	CF, 100k ohm
R107	24366562	CF, 5600 ohm
R108	24366102	CF, 1k ohm
R109	24366822	CF, 8200 ohm
R110	24366562	CF, 5600 ohm
R111	24366821	CF, 820 ohm
R112	24366332	CF, 3300 ohm
R113	24366112	CF, 1100 ohm
R114	24366222	CF, 2200 ohm
R115	24366101	CF, 100 ohm
R116	24366471	CF, 470 ohm
R117	24366112	CF, 1100 ohm
R118	24366470	CF, 47 ohm
R119	24366472	CF, 4700 ohm
R120	24366154	CF, 150k ohm
R121	24366331	CF, 330 ohm
R122	24366820	CF, 82 ohm
R123	24366241	CF, 240 ohm
R124	24366271	CF, 270 ohm
R125	24366331	CF, 330 ohm
R126	24366101	CF, 100 ohm
⚠ R127	24552101	OMF, 100 ohm, 1/2W
R128	24366334	CF, 330k ohm
R129	24366101	CF, 100 ohm
R130	24366513	CF, 51k ohm
R131	24366753	CF, 75k ohm
R132	24366684	CF, 680k ohm
R133	24366332	CF, 3300 ohm
R134	24366223	CF, 22k ohm
R151	24066953	VR, 5k ohm, 1/10W
R152	24066951	VR, 20k ohm, 1/10W
R153	24066946	VR, 1M ohm, 1/10W
R161	24366131	CF, 130 ohm
R162	24366680	CF, 68 ohm
R163	24366682	CF, 6800 ohm
R164	24366102	CF, 1k ohm
R165	24366562	CF, 5600 ohm
R166	24366390	CF, 39 ohm
⚠ R167	24552101	OMF, 100 ohm, 1/2W
R168	24366680	CF, 68 ohm
R169	24366682	CF, 6800 ohm
R170	24366102	CF, 1k ohm
R171	24366562	CF, 5600 ohm
R172	24366101	CF, 100 ohm
⚠ R173	24552101	OMF, 100 ohm, 1/2W
R174	24366100	CF, 10 ohm
R201	24366271	CF, 270 ohm
R208	24366101	CF, 100 ohm
R209	24366103	CF, 10k ohm
R210	24366203	CF, 20k ohm
R211	24366622	CF, 6200 ohm
R212	24366101	CF, 100 ohm
R213	24366101	CF, 100 ohm
R214	24366182	CF, 1800 ohm
R215	24366152	CF, 1500 ohm
R216	24366133	CF, 13k ohm
R217	24366101	CF, 100 ohm
R218	24366222	CF, 2200 ohm
R219	24366472	CF, 4700 ohm
R241	24366103	CF, 10k ohm
R242	24366392	CF, 3900 ohm
R243	24366183	CF, 18k ohm
R252	24061591	VR, 2k ohm, 1/8W
R253	24061591	VR, 2k ohm, 1/8W
R255	24066952	VR, 10k ohm, 1/10W
R260	24366103	CF, 10k ohm
R261	24366103	CF, 10k ohm
R301	24366301	CF, 300 ohm
R302	24366244	CF, 240k ohm
R303	24366223	CF, 22k ohm
R303	24366561	CF, 560 ohm
R304	24366102	CF, 1k ohm
R305	24366161	CF, 160 ohm
R309	24366102	CF, 1k ohm
⚠ R311	24552242	OMF, 2400 ohm, 1/2W
R318	24366203	CF, 20k ohm
⚠ R319	24553681	OMF, 680 ohm, 1W
⚠ R320	24322828	OMF, 0.82 ohm, 1W
R321	24366113	CF, 11k ohm
R322	24366823	CF, 82k ohm
⚠ R323	24322828	OMF, 0.82 ohm, 1W
⚠ R325	24552122	OMF, 1200 ohm, 1/2W
⚠ R326	24552122	OMF, 1200 ohm, 1/2W
⚠ R327	24557279	FR, 2.7 ohm, ±10%, 1W
⚠ R328	24322479	OMF, 4.7 ohm, 1W
R329	24376472	CF, 4700 ohm, 1/2W
R333	24366103	CF, 10k ohm
R334	24366103	CF, 10k ohm

Location No.	Part No.	Description
R335	24366123	CF, 12k ohm
R337	24366623	CF, 62k ohm
R338	24366473	CF, 47k ohm
R351	24066820	VR, 47k ohm, ±20%, 1/10W
R356	24066713	VR, 10k ohm, ±20%, 0.15W
R357	24066712	VR, 470k ohm, ±20%
R358	24066710	VR, 2.2k ohm, ±20%
R361	24367393	CF, 39k ohm, ±2%
R362	24367562	CF, 5600 ohm, ±2%
R363	24367223	CF, 22k ohm, ±2%
R364	24366823	CF, 82k ohm
R366	24366473	CF, 47k ohm
R367	24366104	CF, 100k ohm
⚠ R369	24381682	OMF, 6800 ohm, 1/2W
R370	24366682	CF, 6800 ohm
R371	24367393	CF, 39k ohm, ±2%
⚠ R372	24003984	MF, 1k ohm, 1/4W
R373	24366394	CF, 390k ohm
R375	24366182	CF, 1800 ohm
R376	24367102	CF, 1k ohm, ±2%
R377	24366184	CF, 180k ohm
R378	24366364	CF, 360k ohm
R380	24366153	CF, 15k ohm
R383	24945335	CC, 3.3M ohm, ±10%, 1/4W
R384	24366103	CF, 10k ohm
R402	24366273	CF, 27k ohm
R403	24366302	CF, 3k ohm
R404	24366103	CF, 10k ohm
R405	24366511	CF, 510 ohm
R406	24366621	CF, 620 ohm
R407	24366201	CF, 200 ohm
R408	24366562	CF, 5600 ohm
R409	24366103	CF, 10k ohm
⚠ R410	24552432	OMF, 4300 ohm, 1/2W
R411	24366301	CF, 300 ohm
R412	24366241	CF, 240 ohm
⚠ R416	24384432	OMF, 4300 ohm, 3W
⚠ R418	24553682	OMF, 6800 ohm, 1W
R419	24942390	CC, 39 ohm, 1/2W
⚠ R420	24009951	OMF, 1k ohm, 1W
R421	24366105	CF, 1M ohm
⚠ R423	24552221	OMF, 220 ohm, 1/2W
⚠ R440	24552103	OMF, 10k ohm, 1/2W
⚠ R441	24552103	OMF, 10k ohm, 1/2W
⚠ R444	24323828	OMF, 0.82 ohm, 2W
⚠ R446	24532151	FR, 150 ohm, 1W
⚠ R448	24547399	FR, 3.9 ohm, 1W
R451	24066499	PTC Thermistor, 22k ohm
R452	24069547	VR, 5k ohm, 0.08W
R502	24366683	CF, 68k ohm
R503	24366202	CF, 2k ohm
R504	24366391	CF, 390 ohm
R505	24366822	CF, 8200 ohm
R507	24366822	CF, 8200 ohm
R509	24366273	CF, 27k ohm
R510	24366101	CF, 100 ohm
R511	24366822	CF, 8200 ohm
R512	24366152	CF, 1500 ohm
R513	24366152	CF, 1500 ohm
R514	24366562	CF, 5600 ohm
R515	24366101	CF, 100 ohm
R516	24366101	CF, 100 ohm
R517	24366101	CF, 100 ohm
R521	24366102	CF, 1k ohm

Location No.	Part No.	Description
R522	24360185	CF, 1.8M ohm, 1/8W
R523	24366303	CF, 30k ohm
R531	24366102	CF, 1k ohm
R532	24366272	CF, 2700 ohm
R533	24366132	CF, 1300 ohm
R534	24376104	CF, 100k ohm, 1/2W
R535	24366302	CF, 3k ohm
R536	24376104	CF, 100k ohm, 1/2W
R537	24366132	CF, 1300 ohm
R538	24366332	CF, 3300 ohm
R539	24366132	CF, 1300 ohm
R540	24376104	CF, 100k ohm, 1/2W
R541	24366821	CF, 820 ohm
R542	24366271	CF, 270 ohm
R543	24366103	CF, 10k ohm
R544	24366101	CF, 100 ohm
R545	24366101	CF, 100 ohm
R547	24366471	CF, 470 ohm
R548	24366471	CF, 470 ohm
R549	24366471	CF, 470 ohm
R551	24066955	VR, 1k ohm, 1/10W
R557	24061591	VR, 2k ohm, 1/8W
R558	24061591	VR, 2k ohm, 1/8W
R559	24061591	VR, 2k ohm, 1/8W
R560	24366512	CF, 5100 ohm
R561	24366821	CF, 820 ohm
R562	24366333	CF, 33k ohm
R565	24366512	CF, 5100 ohm
R566	24366512	CF, 5100 ohm
R567	24366333	CF, 33k ohm
R568	24366821	CF, 820 ohm
R569	24366333	CF, 33k ohm
R570	24366562	CF, 5600 ohm
R571	24366562	CF, 5600 ohm
R572	24366562	CF, 5600 ohm
R573	24366104	CF, 100k ohm
⚠ R591	24009957	OMF, 10k ohm, 2W
⚠ R592	24009957	OMF, 10k ohm, 2W
⚠ R593	24009957	OMF, 10k ohm, 2W
R601	24366102	CF, 1k ohm
R602	24366561	CF, 560 ohm
R603	24366222	CF, 2200 ohm
R609	24366102	CF, 1k ohm
R610	24366102	CF, 1k ohm
R611	24366102	CF, 1k ohm
R612	24366154	CF, 150k ohm
R613	24366682	CF, 6800 ohm
R614	24366682	CF, 6800 ohm
R615	24366102	CF, 1k ohm
R618	24366103	CF, 10k ohm
R619	24366122	CF, 1200 ohm
R620	24366103	CF, 10k ohm
R621	24366122	CF, 1200 ohm
R622	24366122	CF, 1200 ohm
R624	24366154	CF, 150k ohm
R625	24366154	CF, 150k ohm
R626	24366472	CF, 4700 ohm
R627	24366472	CF, 4700 ohm
R628	24366103	CF, 10k ohm
R629	24366103	CF, 10k ohm
R630	24366223	CF, 22k ohm
R631	24366223	CF, 22k ohm
R632	24366201	CF, 200 ohm
R633	24366201	CF, 200 ohm

Location No.	Part No.	Description
⚠ R634	24321229	OMF, 2.2 ohm, 1/2W
⚠ R635	24321229	OMF, 2.2 ohm, 1/2W
⚠ R636	24321229	OMF, 2.2 ohm, 1/2W
⚠ R637	24321229	OMF, 2.2 ohm, 1/2W
R638	24366271	CF, 270 ohm
R639	24366271	CF, 270 ohm
R641	24366562	CF, 5600 ohm
R642	24366562	CF, 5600 ohm
R643	24366103	CF, 10k ohm
R645	24366682	CF, 6800 ohm
R646	24366682	CF, 6800 ohm
R647	24366473	CF, 47k ohm
R648	24366103	CF, 10k ohm
R660	24946221	CC, 220 ohm, ±10%, 1/2W
R661	24946221	CC, 220 ohm, ±10%, 1/2W
R664	24366102	CF, 1k ohm
R665	24366563	CF, 56k ohm
R666	24366563	CF, 56k ohm
R667	24366102	CF, 1k ohm
R668	24366102	CF, 1k ohm
R669	24366102	CF, 1k ohm
R670	24366183	CF, 18k ohm
R671	24366242	CF, 2400 ohm
R672	24366561	CF, 560 ohm
R673	24366271	CF, 270 ohm
R675	24366821	CF, 820 ohm
R679	24366102	CF, 1k ohm
R680	24366152	CF, 1500 ohm
R681	24366223	CF, 22k ohm
R682	24366105	CF, 1M ohm
R683	24366821	CF, 820 ohm
R684	24366222	CF, 2200 ohm
⚠ R686	24552431	OMF, 430 ohm, 1/2W
⚠ R801	24007857	Cement, 6.2 ohm, 15W
R810	24377274	CF, 270k ohm, 1W
R814	24366823	CF, 82k ohm
R815	24366221	CF, 220 ohm
R816	24367122	CF, 1200 ohm, ±2%
⚠ R817	24321688	OMF, 0.68 ohm, 1/2W
⚠ R818	24384203	OMF, 20k ohm, 3W
R819	24366689	CF, 6.8 ohm
⚠ R821	24007778	Cement, 180 ohm, 7W
R822	24366390	CF, 39 ohm
R823	24367912	CF, 9100 ohm, ±2%
R824	24366123	CF, 12k ohm
⚠ R825	24531620	FR, 62 ohm, 1/2W
⚠ R828	24383123	OMF, 12k ohm, 2W
R832	24366272	CF, 2700 ohm
R834	24366101	CF, 100 ohm
⚠ R836	24321228	OMF, 0.22 ohm, 1/2W
R838	24366561	CF, 560 ohm
⚠ R841	24366472	CF, 4700 ohm
⚠ R843	24383134	OMF, 130k ohm, 2W
R844	24383134	OMF, 130k ohm, 2W
R845	24377224	CF, 220k ohm, 1W
⚠ R846	24552101	OMF, 100 ohm, 1/2W
⚠ R847	24382390	OMF, 39 ohm, 1W
R848	24366681	CF, 680 ohm
R849	24366681	CF, 680 ohm
R851	24066620	VR, 2.2k ohm, ±20%, 1/10W
R860	24366822	CF, 8200 ohm
⚠ R861	24531100	FR, 10 ohm, 1/2W
R862	24366681	CF, 680 ohm
R863	24366471	CF, 470 ohm

Location No.	Part No.	Description
⚠ R864	24000954	FR, 0.68 ohm, ±10%, 2W
⚠ R870	24007822	Cement, 82 ohm, 5W
⚠ R875	24384822	OMF, 8200 ohm, 3W
⚠ R876	24982109	MF, 1 ohm, 1/2W
R877	24366102	CF, 1k ohm
⚠ R878	24383101	OMF, 100 ohm, 2W
⚠ R890	24000630	PTC Thermistor, Dual
R901	24946272	CC, 2700 ohm, ±10%, 1/2W
R902	24946272	CC, 2700 ohm, ±10%, 1/2W
R903	24946272	CC, 2700 ohm, ±10%, 1/2W
⚠ R920	24000818	FR, 5.6 ohm, 1W
RA01	24366103	CF, 10k ohm
RA02	24366473	CF, 47k ohm
RA03	24366103	CF, 10k ohm
RA04	24366102	CF, 1k ohm
RA05	24366473	CF, 47k ohm
RA06	24366102	CF, 1k ohm
RA09	24366103	CF, 10k ohm
RA10	24366103	CF, 10k ohm
RA11	24366102	CF, 1k ohm
RA12	24366123	CF, 12k ohm
RA13	24366103	CF, 10k ohm
RA15	24366103	CF, 10k ohm
RA17	24366102	CF, 1k ohm
RA18	24366101	CF, 100 ohm
RA20	24366102	CF, 1k ohm
RA21	24366223	CF, 22k ohm
RA22	24366333	CF, 33k ohm
RA23	24366333	CF, 33k ohm
RA24	24366333	CF, 33k ohm
RA25	24360225	CF, 2.2M ohm, 1/8W
RA26	24366101	CF, 100 ohm
RA27	24366333	CF, 33k ohm
RA28	24366473	CF, 47k ohm
RA29	24366103	CF, 10k ohm
RA30	24366102	CF, 1k ohm
RA32	24366102	CF, 1k ohm
RA34	24366123	CF, 12k ohm
RA35	24366102	CF, 1k ohm
RA36	24366102	CF, 1k ohm
RA44	24366105	CF, 1M ohm
RA45	24366102	CF, 1k ohm
RA48	24366153	CF, 15k ohm
RA63	24366473	CF, 47k ohm
RA64	24366152	CF, 1500 ohm
RA65	24366103	CF, 10k ohm
RA66	24366103	CF, 10k ohm
RA67	24366272	CF, 2700 ohm
RA68	24366102	CF, 1k ohm
RA70	24941565	CC, 5.6M ohm, 1/4W
RA71	24941565	CC, 5.6M ohm, 1/4W
RA72	24941565	CC, 5.6M ohm, 1/4W
RA73	24941565	CC, 5.6M ohm, 1/4W
RA74	24366472	CF, 4700 ohm
RA75	24366471	CF, 470 ohm
RA76	24366471	CF, 470 ohm
RA77	24366471	CF, 470 ohm
RA79	24366123	CF, 12k ohm
RA80	24366221	CF, 220 ohm
RA81	24366103	CF, 10k ohm
RA82	24366103	CF, 10k ohm
RA83	24366103	CF, 10k ohm
RA84	24366622	CF, 6200 ohm
RA86	24366332	CF, 3300 ohm

Location No.	Part No.	Description
RA87	24366473	CF, 47k ohm
RA91	24366472	CF, 4700 ohm
RA93	24366102	CF, 1k ohm
RA94	24366223	CF, 22k ohm
RA95	24366472	CF, 4700 ohm
RA96	24366434	CF, 430k ohm
RB01	24366103	CF, 10k ohm
RB02	24366332	CF, 3300 ohm
RB03	24366103	CF, 10k ohm
RB04	24366103	CF, 10k ohm
RB05	24366332	CF, 3300 ohm
RB06	24366473	CF, 47k ohm
RE08	24366103	CF, 10k ohm
RE09	24366222	CF, 2200 ohm
RE10	24366332	CF, 3300 ohm
RE11	24366562	CF, 5600 ohm
RE12	24366392	CF, 3900 ohm
RE35	24366222	CF, 2200 ohm
RE36	24366823	CF, 82k ohm
RE37	24366823	CF, 82k ohm
RE38	24366563	CF, 56k ohm
RE39	24366202	CF, 2k ohm
RE40	24366123	CF, 12k ohm
RE41	24366103	CF, 10k ohm
RE42	24366472	CF, 4700 ohm
RE43	24366563	CF, 56k ohm
⚠ RF80	24322109	OMF, 1 ohm, 1W
⚠ RF81	24382273	OMF, 27k ohm, 1W
RG01	24366272	CF, 2700 ohm
RG02	24366103	CF, 10k ohm
RG03	24366103	CF, 10k ohm
RG06	24366683	CF, 68k ohm
RG07	24366683	CF, 68k ohm
RG09	24366473	CF, 47k ohm
RG12	24366303	CF, 30k ohm
RG13	24366103	CF, 10k ohm
RG14	24366822	CF, 8200 ohm
RG15	24366103	CF, 10k ohm
RG16	24366223	CF, 22k ohm
RG17	24366103	CF, 10k ohm
RG21	24366221	CF, 220 ohm
RG22	24366103	CF, 10k ohm
RG23	24366332	CF, 3300 ohm
RG24	24366332	CF, 3300 ohm
RG25	24366101	CF, 100 ohm
RG26	24366102	CF, 1k ohm
RG27	24366101	CF, 100 ohm
RG28	24366102	CF, 1k ohm
RG32	24366473	CF, 47k ohm
RG33	24366122	CF, 1200 ohm
RG34	24366122	CF, 1200 ohm
RG35	24366473	CF, 47k ohm
RG38	24366103	CF, 10k ohm
RG43	24366103	CF, 10k ohm
RG46	24366103	CF, 10k ohm
RG47	24366103	CF, 10k ohm
RG51	24066939	VR, 10k ohm, 1/10W
RG64	24366562	CF, 5600 ohm
RG65	24366473	CF, 47k ohm
RG66	24366224	CF, 220k ohm
RG67	24366473	CF, 47k ohm
RH01	24366220	CF, 22 ohm
RH02	24366220	CF, 22 ohm
RH03	24366220	CF, 22 ohm

Location No.	Part No.	Description
RH04	24366510	CF, 51 ohm
RH05	24366510	CF, 51 ohm
RH06	24366510	CF, 51 ohm
RH10	24366510	CF, 51 ohm
RH11	24366510	CF, 51 ohm
RH12	24366510	CF, 51 ohm
RH13	24366220	CF, 22 ohm
RH14	24366220	CF, 22 ohm
RH15	24366220	CF, 22 ohm
RH16	24366103	CF, 10k ohm
RH17	24366680	CF, 68 ohm
RH18	24366910	CF, 91 ohm
RH19	24366474	CF, 470k ohm
RH20	24366474	CF, 470k ohm
RH21	24366910	CF, 91 ohm
RH22	24366103	CF, 10k ohm
RH23	24366474	CF, 470k ohm
RH24	24366680	CF, 68 ohm
RH25	24366474	CF, 470k ohm
RH26	24366471	CF, 470 ohm
RH27	24366471	CF, 470 ohm
RH28	24366474	CF, 470k ohm
RH29	24366152	CF, 1500 ohm
RH31	24366750	CF, 75 ohm
RH32	24366750	CF, 75 ohm
RH33	24366104	CF, 100k ohm
RM03	24366432	CF, 4300 ohm
RM04	24366103	CF, 10k ohm
RM05	24366471	CF, 470 ohm
RM06	24366221	CF, 220 ohm
RM26	24366333	CF, 33k ohm
RN08	24366224	CF, 220k ohm
RN09	24360185	CF, 1.8M ohm, 1/8W
RN10	24366473	CF, 47k ohm
RN11	24366473	CF, 47k ohm
RN12	24366272	CF, 2700 ohm
RN13	24366103	CF, 10k ohm
RN14	24366103	CF, 10k ohm
RN15	24366223	CF, 22k ohm
RN16	24366103	CF, 10k ohm
RN17	24366473	CF, 47k ohm
RN18	24366102	CF, 1k ohm
RN19	24366473	CF, 47k ohm
RN20	24366152	CF, 1500 ohm
RN21	24366103	CF, 10k ohm
RN22	24366152	CF, 1500 ohm
RN23	24366472	CF, 4700 ohm
RN24	24366103	CF, 10k ohm
RN25	24366154	CF, 150k ohm
RN26	24366472	CF, 4700 ohm
RN27	24366153	CF, 15k ohm
RN28	24366332	CF, 3300 ohm
RN30	24366103	CF, 10k ohm
RN31	24366473	CF, 47k ohm
RN32	24366105	CF, 1M ohm
RN33	24366103	CF, 10k ohm
RN34	24366473	CF, 47k ohm
RN35	24366102	CF, 1k ohm
RN36	24366103	CF, 10k ohm
RN37	24366473	CF, 47k ohm
RN38	24366562	CF, 5600 ohm
RN39	24366562	CF, 5600 ohm
RN40	24366562	CF, 5600 ohm
RN41	24366152	CF, 1500 ohm

Location No.	Part No.	Description
RN44	24366152	CF, 1500 ohm
RN45	24366473	CF, 47k ohm
RN46	24366103	CF, 10k ohm
RN47	24366473	CF, 47k ohm
RN48	24366103	CF, 10k ohm
RN64	24366103	CF, 10k ohm
RR06	24366391	CF, 390 ohm
RS01	24366473	CF, 47k ohm
RS02	24366473	CF, 47k ohm
RS03	24366473	CF, 47k ohm
RS04	24366473	CF, 47k ohm
RS05	24366103	CF, 10k ohm
RS06	24366101	CF, 100 ohm
RS07	24366820	CF, 82 ohm
RS08	24366820	CF, 82 ohm
RS09	24366101	CF, 100 ohm
RV01	24366821	CF, 820 ohm
RV02	24366102	CF, 1k ohm
RV03	24366101	CF, 100 ohm
RV04	24366101	CF, 100 ohm
RV05	24366101	CF, 100 ohm
RV06	24366101	CF, 100 ohm
RV07	24366101	CF, 100 ohm
RV08	24366101	CF, 100 ohm
RV09	24366103	CF, 10k ohm
RV11	24366103	CF, 10k ohm
RV12	24366101	CF, 100 ohm
RV13	24366222	CF, 2200 ohm
RV14	24366100	CF, 10 ohm
RV15	24366332	CF, 3300 ohm
RV16	24366332	CF, 3300 ohm
RV18	24366101	CF, 100 ohm
⚠ RV19	24552750	OMF, 75 ohm, 1/2W
RV20	24366101	CF, 100 ohm
RV21	24366391	CF, 390 ohm
RV22	24366473	CF, 47k ohm
RV23	24366103	CF, 10k ohm
RV24	24366473	CF, 47k ohm
RV25	24366473	CF, 47k ohm
RV26	24366473	CF, 47k ohm
RV27	24366472	CF, 4700 ohm
RV28	24366103	CF, 10k ohm
RV29	24366103	CF, 10k ohm
RV30	24366152	CF, 1500 ohm
RV32	24366471	CF, 470 ohm
RV33	24366103	CF, 10k ohm
RV34	24366473	CF, 47k ohm
RV35	24366473	CF, 47k ohm
RV36	24366103	CF, 10k ohm
RV37	24366473	CF, 47k ohm
RV38	24366473	CF, 47k ohm
RV39	24366473	CF, 47k ohm
RV40	24366473	CF, 47k ohm
RV41	24366473	CF, 47k ohm
RV42	24366101	CF, 100 ohm
RV43	24366101	CF, 100 ohm
RV44	24366472	CF, 4700 ohm
RV45	24366472	CF, 4700 ohm
RV46	24366102	CF, 1k ohm
RV47	24366472	CF, 4700 ohm
RV62	24366103	CF, 10k ohm
RV63	24366332	CF, 3300 ohm
RV64	24366473	CF, 47k ohm
RV65	24366332	CF, 3300 ohm

Location No.	Part No.	Description
RV66	24366473	CF, 47k ohm
RX02	24366102	CF, 1k ohm
RX05	24366101	CF, 100 ohm
RX08	24366101	CF, 100 ohm
RX10	24366101	CF, 100 ohm
RX13	24366223	CF, 22k ohm
RY01	24366102	CF, 1k ohm
RY02	24366681	CF, 680 ohm
RY03	24366681	CF, 680 ohm
RY04	24366102	CF, 1k ohm
RY05	24366101	CF, 100 ohm
RY06	24366101	CF, 100 ohm
RY07	24367102	CF, 1k ohm, ±2%
RY08	24366152	CF, 1500 ohm
RY09	24366152	CF, 1500 ohm
RY11	24366202	CF, 2k ohm
RY12	24366302	CF, 3k ohm
RY13	24366512	CF, 5100 ohm
RY14	24366912	CF, 9100 ohm
RY15	24366242	CF, 2400 ohm
RY16	24366561	CF, 560 ohm
RY17	24366561	CF, 560 ohm
RY18	24366132	CF, 1300 ohm
RY19	24366182	CF, 1800 ohm
RY21	24366101	CF, 100 ohm
RY22	24366153	CF, 15k ohm
RY31	24366151	CF, 150 ohm
RY32	24366182	CF, 1800 ohm
RY34	24366182	CF, 1800 ohm
RY35	24366181	CF, 180 ohm
RY36	24366183	CF, 18k ohm
RY37	24366331	CF, 330 ohm
RY38	24366223	CF, 22k ohm
RY45	24366472	CF, 4700 ohm

COILS & TRANSFORMERS

L101	23237987	Coil, Peaking, TRF4100AC
L102	23262680	Coil, IF, TRF1148D
L103	23237986	Coil, Peaking, TRF4120AC
L104	23237987	Coil, Peaking, TRF4100AC
L105	23237999	Coil, Peaking, TRF4109AC
L107	23237987	Coil, Peaking, TRF4100AC
L151	23262668	Coil, IF, TRF1162T
L152	23262663	Coil, IF, TRF1157T
L153	23262813	Coil, IF, TRF1077D
L161	23261976	Coil, RF Choke, TRF9228
L162	23201003	Coil, Choke, TRF9202A
L311	23261974	Coil, Choke, HC5-035
L361	23221738	Coil, Choke, TLN3132D
L362	23211896	Coil, Choke, AT4043/60T
L363	23211897	Coil, Choke, AT4043/100T
L406	23103859	Coil (Ferrite Bead), TEM2011
L411	23233068	Coil, Linearity, TLN2117
L412	23221936	Coil, Choke, TLN3041
⚠ L462	23227340	Deflection Yoke, AT6000/01
L503	23237987	Coil, Peaking, TRF4100AC
L551	23250972	Coil, 1H-Delay Matching, TRF5418D
L601	23262680	Coil, IF, TRF1148D
L602	23262821	Coil, PIF, TRF1069
L604	23237986	Coil, Peaking, TRF4120AC
L651	23232942	Coil, Variable, TRF3077
L652	23232942	Coil, Variable, TRF3077
L661	23237986	Coil, Peaking, TRF4120AC

Location No.	Part No.	Description
L662	23232946	Coil, Variable, TRF3073D
L801	23221050	Coil, RF Choke, TLN1015
L802	23103859	Coil (Ferrite Bead), TEM2011
L803	23221747	Coil, Choke, TRF9253D
L804	23221747	Coil, Choke, TRF9253D
L805	23222694	Coil, Width, TLN2026
L806	23103859	Coil (Ferrite Bead), TEM2011
L807	23222694	Coil, Width, TLN2026
L810	23103859	Coil (Ferrite Bead), TEM2011
L811	23103859	Coil (Ferrite Bead), TEM2011
L812	23103859	Coil (Ferrite Bead), TEM2011
L813	23222694	Coil, Width, TLN2026
⚠ L901	23200713	Coil, Degaussing, TSB2282
LA01	23238934	Coil, Peaking, TRF4109AC
LA02	23221803	Coil, Choke, TLN3040D
LB01	23262778	Coil, IF, TRF1112
LG01	23262808	Coil, IF, TRF1082
LM01	23262797	Coil, IF, TRF1093D
LM02	23272988	Coil, Chroma Demod, TRF5414
LM03	23272988	Coil, Chroma Demod, TRF5414
LM04	23262798	Coil, IF, TRF1092D
LN03	23237983	Coil, Peaking, TRF4220AC
LV01	23237986	Coil, Peaking, TRF4120AC
LY03	23237983	Coil, Peaking, TRF4220AC
LY04	23237982	Coil, Peaking, TRF4270AC
⚠ T401	23224997	Transformer, Horiz. Drive, TLN1027
⚠ T461	23236089	Transformer, Flyback, G4298
T801	23211925	Line Filter, TRF3128
T802	23211962	Line Filter, TRF3117
⚠ T803	23213580	Transformer, Converter, G4326-04
T804	23213582	Transformer, Converter, TPW3105

SEMICONDUCTORS

Location No.	Part No.	Description
IC101	23318437	IC, μPC1820CA
IC303	23318301	IC, TDA8170
IC361	23318231	IC, TEA2031A
IC408	23318218	IC, μPC7812H
IC501	B0379435	IC, TA8653N
IC601	23318390	IC, TDA4480-2
IC602	B0356190	IC, TA7630P
IC606	23318195	IC, AN7171NK
IC661	B0383400	IC, TA8710S
⚠ IC801	23318232	IC, TDA4601
IC805	23318299	IC, L78MR05-FA
ICA01	23318407	IC, M50436-686SP
ICA02	23119182	IC, μPD6336C
ICA03	23318414	IC, M6M80011P
ICA12	23119441	IC, LA7910
ICG01	23119092	IC, TDA6600-2
ICG02	B0349250	IC, TA75393S
ICG03	B0470522	IC, TC4052BP
ICH01	23119139	IC, AN5862K
ICV01	B0383505	IC, TA8720AN
ICY01	23318055	IC, TDA4565
Q102	23114691	Transistor, BC557A
Q103	23118980	Transistor, BC337
Q104	23114689	Transistor, BC547A
Q161	A6708871	Transistor, 2SC388ATM
Q162	A6708871	Transistor, 2SC388ATM
Q202	23114689	Transistor, BC547A
Q304	23114689	Transistor, BC547A
Q305	23114689	Transistor, BC547A
Q362	23114689	Transistor, BC547A
Q363	23114689	Transistor, BC547A
Q402	A678971D	Transistor, 2SC1569 FA-5
⚠ Q404	23314376	Transistor, ON4409
Q406	23314229	Transistor, 2SD1378-Q
Q505	23114693	Transistor, BF871
Q506	23114689	Transistor, BC547A
Q507	23114693	Transistor, BF871
Q508	23114689	Transistor, BC547A
Q509	23114693	Transistor, BF871
Q510	23114689	Transistor, BC547A
Q514	23114688	Transistor, BC327
Q515	23114689	Transistor, BC547A
Q516	A6734585	Transistor, 2SC752GTM-O
Q518	A6734585	Transistor, 2SC752GTM-O
Q519	23114689	Transistor, BC547A
Q604	23114689	Transistor, BC547A
Q605	23114689	Transistor, BC547A
Q608	23114689	Transistor, BC547A
Q609	23114691	Transistor, BC557A
Q660	23114689	Transistor, BC547A
Q671	23114689	Transistor, BC547A
Q672	23114689	Transistor, BC547A
Q802	A6870900	Transistor, 2SD1548
Q804	23114689	Transistor, BC547A
Q807	23314018	Transistor, 2SC3678
Q807E	23030211	Screw, 3X14SN
Q808	A6534145	Transistor, 2SA1020-Y
Q809	23114632	Transistor, BC547B
Q810	23114546	Transistor, BC557B
QA05	23114689	Transistor, BC547A
QA06	23114689	Transistor, BC547A
QA07	23114691	Transistor, BC557A
QA08	23114689	Transistor, BC547A
QA11	23114689	Transistor, BC547A
QA14	23114689	Transistor, BC547A
QA15	23114689	Transistor, BC547A
QA16	A6041876	Transistor, 2SK117-GR FA-2
QA17	23114689	Transistor, BC547A
QA21	23114689	Transistor, BC547A
QA22	23114689	Transistor, BC547A
QA23	23114691	Transistor, BC557A
QB01	23114689	Transistor, BC547A
QB02	23114689	Transistor, BC547A
QE08	23114689	Transistor, BC547A
QE09	23114691	Transistor, BC557A
QE10	23114689	Transistor, BC547A
QE11	23114691	Transistor, BC557A
QF80	23314374	Transistor, BD945
QG05	23114689	Transistor, BC547A
QG07	23114689	Transistor, BC547A
QG09	23114689	Transistor, BC547A
QG10	23114691	Transistor, BC557A
QG14	23114689	Transistor, BC547A
QG15	23114689	Transistor, BC547A
QG16	23114689	Transistor, BC547A
QG18	23114689	Transistor, BC547A
QN02	23114691	Transistor, BC557A
QN03	23114691	Transistor, BC557A
QN04	A6041876	Transistor, 2SK117-GR FA-2

Location No.	Part No.	Description
QN05	23114689	Transistor, BC547A
QN06	23114689	Transistor, BC547A
QN07	23114689	Transistor, BC547A
QN08	23114689	Transistor, BC547A
QN09	23114689	Transistor, BC547A
QN10	23114689	Transistor, BC547A
QN11	23114689	Transistor, BC547A
QN12	23114689	Transistor, BC547A
QN13	23114689	Transistor, BC547A
QN15	23114689	Transistor, BC547A
QN16	23114689	Transistor, BC547A
QS01	23114689	Transistor, BC547A
QS02	23114689	Transistor, BC547A
QS03	23114691	Transistor, BC557A
QV01	23318863	Transistor, TA8720N
QV02	23114689	Transistor, BC547A
QV03	23114689	Transistor, BC547A
QV04	23114689	Transistor, BC547A
QV05	23114689	Transistor, BC547A
QV06	23114691	Transistor, BC557A
QV07	23114689	Transistor, BC547A
QV08	A6342200	Transistor, 2SC2878-A
QV09	23114689	Transistor, BC547A
QV11	23114689	Transistor, BC547A
QV12	23114689	Transistor, BC547A
QV13	23114691	Transistor, BC557A
QV14	23114691	Transistor, BC557A
QV16	23114632	Transistor, BC547B
QV17	23114632	Transistor, BC547B
QY05	23114691	Transistor, BC557A
QY08	23114689	Transistor, BC547A
QY09	23114689	Transistor, BC547A
QY10	23114689	Transistor, BC547A
QY11	23114689	Transistor, BC547A
QY12	23114689	Transistor, BC547A
QY13	23114691	Transistor, BC557A
D241	A7150041	Diode, 1SS104
D302	A7568250	Diode, 1S1834
D303	23118102	Diode, Zener, ZPY-6.8
D305	23118479	Diode, BYD33J
D306	23115599	Diode, 1N4148
D314	A7117205	Diode, Zener, 04AZ12X
D315	A7116725	Diode, Zener, 04AZ7.5Z
D361	A7117705	Diode, Zener, 04AZ20X
D362	23115599	Diode, 1N4148
D363	23118633	Diode, Zener, RD3.0ES-B2
D367	23115599	Diode, 1N4148
D368	A7118135	Diode, Zener, 04AZ30R
D401	A7116925	Diode, Zener, 04AZ9.1Z
D402	A7117215	Diode, Zener, 04AZ12Y
D405	A7117725	Diode, Zener, 04AZ20Z
D406	23118479	Diode, BYD33J
D408	23118479	Diode, BYD33J
D409	A7117015	Diode, Zener, 04AZ10Y
D410	A7116815	Diode, Zener, 04AZ8.2Y
D440	23118995	Diode, BY228
D441	23118994	Diode, BYW95C
D591	23115599	Diode, 1N4148
D592	23115599	Diode, 1N4148
D593	23115599	Diode, 1N4148
D594	23115599	Diode, 1N4148
D595	23115599	Diode, 1N4148
D596	23115599	Diode, 1N4148
D601	23115599	Diode, 1N4148

Location No.	Part No.	Description
D604	23115599	Diode, 1N4148
D605	A7116415	Diode, Zener, 04AZ5.6Y
⚠ D801	23118173	Diode, RBV-406M-LFA
D805	23118479	Diode, BYD33J
D806	23118479	Diode, BYD33J
D807	23118479	Diode, BYD33J
D808	23118736	Diode, BYV96E
D809	23118451	Diode, RU4A
D810	23118054	Diode, BYD73D
D811	23118479	Diode, BYD33J
D812	A7116515	Diode, Zener, 04AZ6.2Y
D818	23118736	Diode, BYV96E
D819	23115599	Diode, 1N4148
D820	23118479	Diode, BYD33J
D821	23118479	Diode, BYD33J
D822	23118526	Diode, Zener, RD6.8ES-B2
D823	23118479	Diode, BYD33J
D824	23118532	Diode, Zener, RD5.1ES-B2
D825	23118479	Diode, BYD33J
D826	23118479	Diode, BYD33J
D827	A7680725	Diode, 10DL2C41
D829	23118479	Diode, BYD33J
D830	23118479	Diode, BYD33J
DA01	23115599	Diode, 1N4148
DA02	23115599	Diode, 1N4148
DA03	23115599	Diode, 1N4148
DA05	23115599	Diode, 1N4148
DA06	23115599	Diode, 1N4148
DA07	23115599	Diode, 1N4148
DA08	23115599	Diode, 1N4148
DA09	23115599	Diode, 1N4148
DA13	23115599	Diode, 1N4148
DA14	23115599	Diode, 1N4148
DA16	23115599	Diode, 1N4148
DA17	23115599	Diode, 1N4148
DA18	23115599	Diode, 1N4148
DA23	23115599	Diode, 1N4148
DA24	23115599	Diode, 1N4148
DA25	23115599	Diode, 1N4148
DA26	23115599	Diode, 1N4148
DA27	A7116315	Diode, Zener, 04AZ5.1Y
DA28	23115599	Diode, 1N4148
DA30	23115878	Diode, Zener, μPC574J(L)
DA31	23115599	Diode, 1N4148
DA32	23115599	Diode, 1N4148
DA34	23115599	Diode, 1N4148
DA36	23115599	Diode, 1N4148
DA37	23115599	Diode, 1N4148
DA39	23115599	Diode, 1N4148
DE11	23115599	Diode, 1N4148
DE12	23115599	Diode, 1N4148
DE13	23115599	Diode, 1N4148
DE40	23118969	Diode (LED), MV57124, Red
DF80	A7117305	Diode, Zener, 04AZ13X
DG01	23115599	Diode, 1N4148
DG02	23115599	Diode, 1N4148
DG03	23115599	Diode, 1N4148
DG04	23115599	Diode, 1N4148
DG05	23115599	Diode, 1N4148
DG40	23318436	Diode (LED), MV53124A, Yellow
DG41	23318436	Diode (LED), MV53124A, Yellow
DH01	23115599	Diode, 1N4148

Location No.	Part No.	Description
DH02	23115599	Diode, 1N4148
DH03	23115599	Diode, 1N4148
DH04	23115599	Diode, 1N4148
DH05	23115599	Diode, 1N4148
DH06	23115599	Diode, 1N4148
DH10	A7116215	Diode, Zener, 04AZ4.7Y
DH11	A7116825	Diode, Zener, 04AZ8.2Z
DH12	A7116825	Diode, Zener, 04AZ8.2Z
DN04	A7288601	Diode, 1S2186 FA-1
DN05	A7116305	Diode, Zener, 04AZ5.1X
DN06	A7288601	Diode, 1S2186 FA-1
DN07	A7288601	Diode, 1S2186 FA-1
DN08	A7288601	Diode, 1S2186 FA-1
DN09	A7288601	Diode, 1S2186 FA-1
DN11	A7288601	Diode, 1S2186 FA-1
DN12	A7288601	Diode, 1S2186 FA-1
DR01	23118447	Photo Coupler, CNY75C
DV01	23115599	Diode, 1N4148
DV02	23115599	Diode, 1N4148
DV03	23115599	Diode, 1N4148
DV04	A7116915	Diode, Zener, 04AZ9.1Y
DV05	23115599	Diode, 1N4148
DV06	23115599	Diode, 1N4148
DV10	23115599	Diode, 1N4148
DV11	23115599	Diode, 1N4148

MISCELLANEOUS

⚠ F801	23144898	Fuse, 3.15A
F801A	23845691	Fuse Holder
K901	23120611	Remote Sensor, 9101-M
P003	23161699	Terminal, 4P
P661	23363607	Headphone Jack, 3.5mm
⚠ P801	23176704	Power Cord
PH01	23365025	Connector, 21PIN
PH02	23365025	Connector, 21PIN
PV01	23365259	Jack Phono, 4P
PV02	23364856	Jack Phono, 2P
S001	23145467	Switch, Slide, 2C2P
S202	23145542	Switch, Lever, 1C3P
S301	23145682	Switch, Lever, 1C3P
⚠ S801	23344069	Mains Switch, PBMS-3025
S801B	23035308	Screw, BTB3X8SZN
SA01	23145429	Switch, Push, 1C1Px3
SA02	23145429	Switch, Push, 1C1Px3
SA03	23145429	Switch, Push, 1C1Px3
SA04	23145429	Switch, Push, 1C1Px3
SA05	23145429	Switch, Push, 1C1Px3
SA06	23145429	Switch, Push, 1C1Px3
SA07	23145428	Switch, Push, 1C1Px4
SA08	23145428	Switch, Push, 1C1Px4
SA09	23145428	Switch, Push, 1C1Px4
SA10	23145428	Switch, Push, 1C1Px4
⚠ V901A	23901293	Socket, CRT, 10P
W201	23250878	Coil, Delay Line, TRF2083
W661	23151200	Speaker, SPK-1268, 60x120mm, 8 ohm
W662	23151200	Speaker, SPK-1268, 60x120mm, 8 ohm
W663	23151200	Speaker, SPK-1268, 60x120mm, 8 ohm
W664	23151200	Speaker, SPK-1268, 60x120mm, 8 ohm
X401	23153886	Ceramic Resonator, TCR1012
X501	23153979	Crystal, 4.43MHz

Location No.	Part No.	Description
X502	23250950	Coil, 1H-Delay Line, DL711
Z101	A5615249	PIF SAW Filter, F1804D
Z102	23153725	Ceramic Resonator, TCR1043
Z103	23107911	Ceramic Video Trap, 5.5 to 6MHz, TCF1019
Z104	23107658	Ceramic Video Trap, 5.74MHz, TCF1052
Z201	23107925	Ceramic Video Trap, 6.5MHz, TCF1013
Z602	A5613025	PIF SAW Filter, F328EM
Z603	23107856	Ceramic Filter, 5.74MHz, TCF1030
Z661	23107947	Ceramic Filter, 5.5MHz, SFE5.5MBF
Z662	23107948	Ceramic Filter, 6.0MHz, SFE6.0MBF
Z663	23107949	Ceramic Filter, 6.5MHz, SFE6.5MBF
Z664	23153900	Ceramic Resonator, 500kHz, TCR1010
Z666	23107948	Ceramic Filter, 6.0MHz, SFE6.0MBF
ZA01	23153847	Ceramic Resonator, 4MHz, TCR1014
ZA02	24000877	Resistor Block, 10k ohmx4, ±20%, 1/8W
ZV01	23107849	Ceramic Video Trap, 4.43MHz, TCF1032

PC BOARD ASSEMBLIES

U101A	23335697	IF Board, PW9178-1
U101B	23335700	MPX Board, PW9178-2
U902A	23335698	Main Board, PW9179
U903	23335699	Power/Def Board, PW9180
U904A	23335701	Back Terminal Board, PW9181-1
U904B	23335702	CRT Drive Board, PW9181-2
U904C	23335703	Mains Switch Board, PW9181-3
U904D	23335704	IR-Amp Board, PW9181-4

PICTURE TUBE

⚠ V901	23312147	Picture Tube, A66EAK00X

TUNER

H001	23121613	Tuner, VHF/UHF, EG443A

REMOTE HAND SET PARTS

K902	23120580	Remote Hand Unit, CT-9381
AT01	23300626	Upper Case
AT02	23300919	Lower Case
AT03	23300920	Battery Cover
AT04	23300921	Filter
ST01	23300627	Rubber Sheet
UT01	23335539	Remote Hand Unit Board, PW6994
ZT01	23153736	Ceramic Resonator, CSB455EB20

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INTENTIONALLY LEFT
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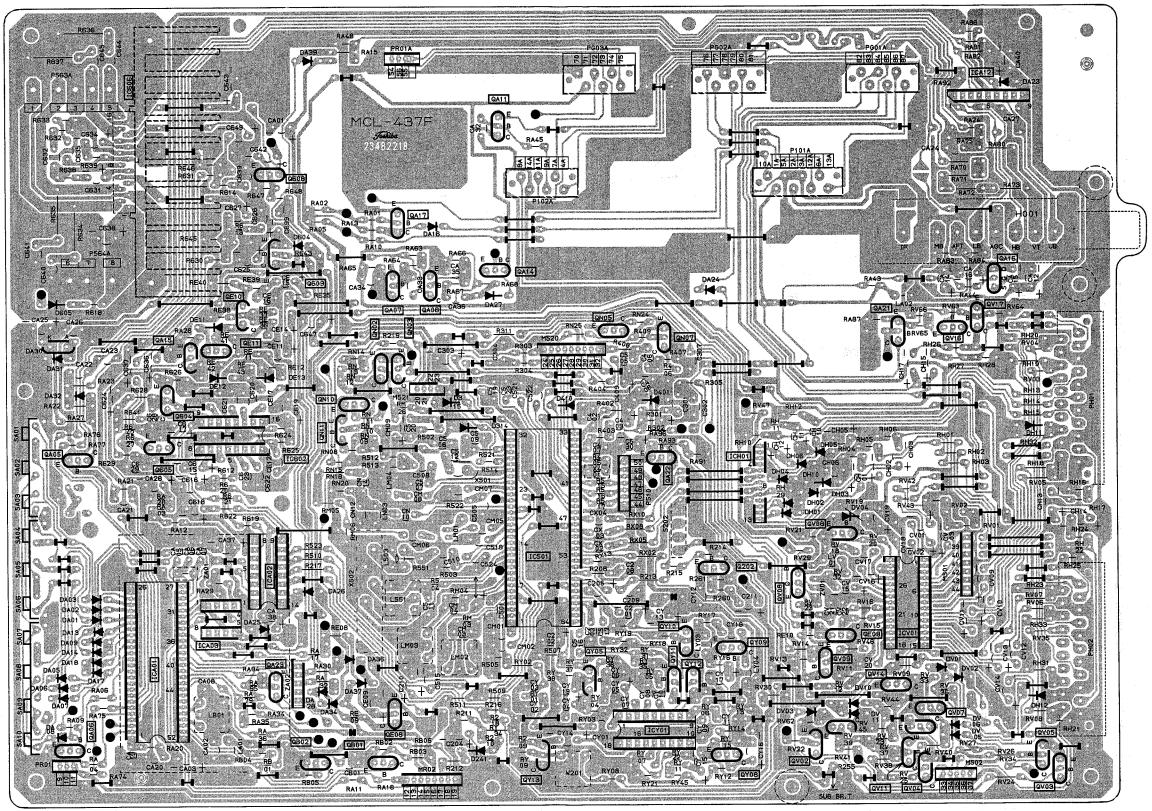
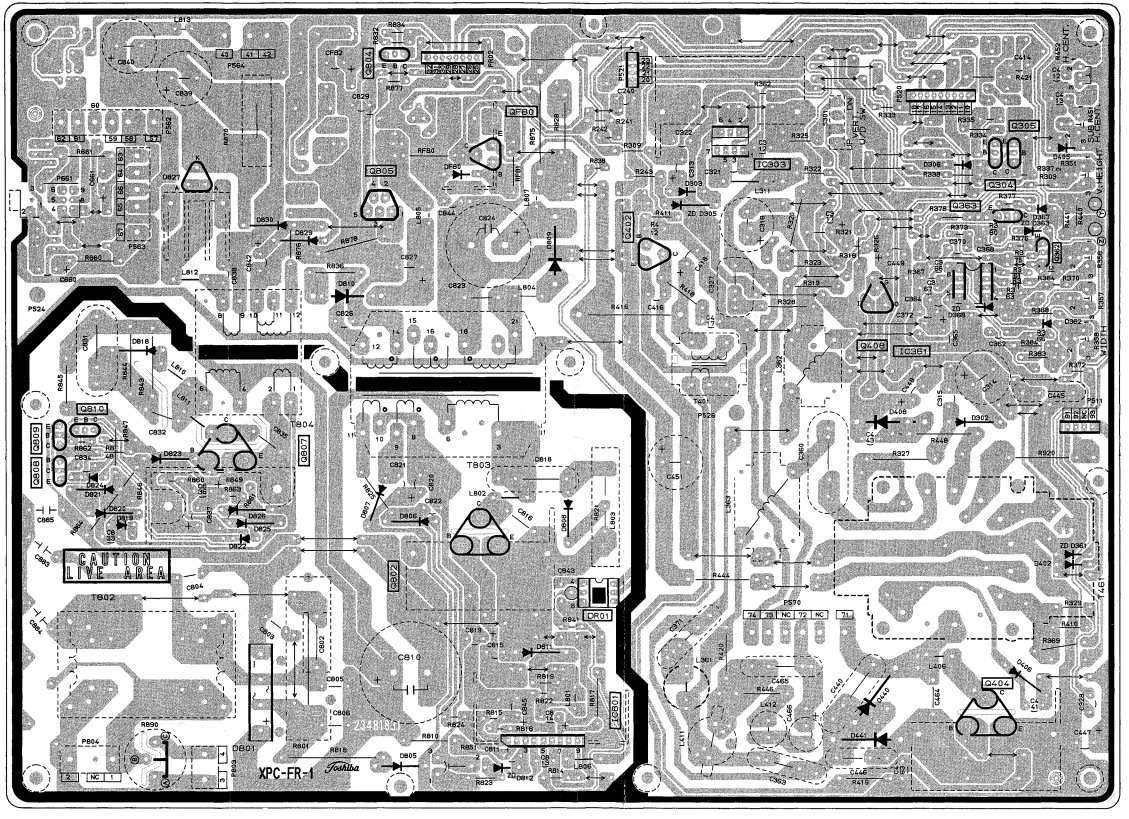
MAIN BOARD PW9179

BOTTOM (FOIL) SIDE



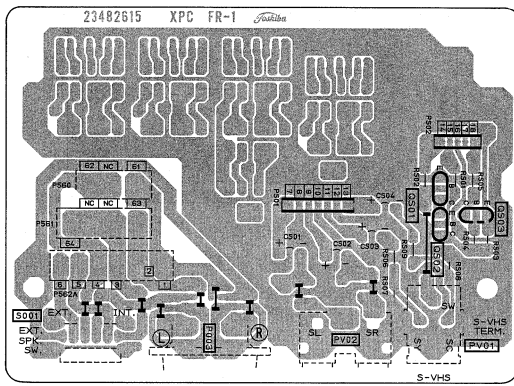
POWER/DEF BOARD PW9180

BOTTOM (FOIL) SIDE



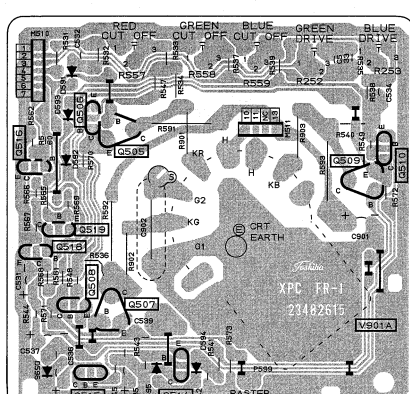
BACK TERMINAL BOARD PW9181-1

BOTTOM (FOIL) SIDE



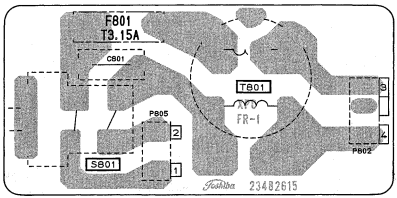
CRT DRIVE BOARD PW9181-2

BOTTOM (FOIL) SIDE



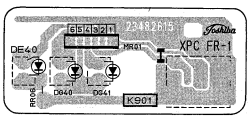
MAINS SW. BOARD PW9181-3

BOTTOM (FOIL) SIDE



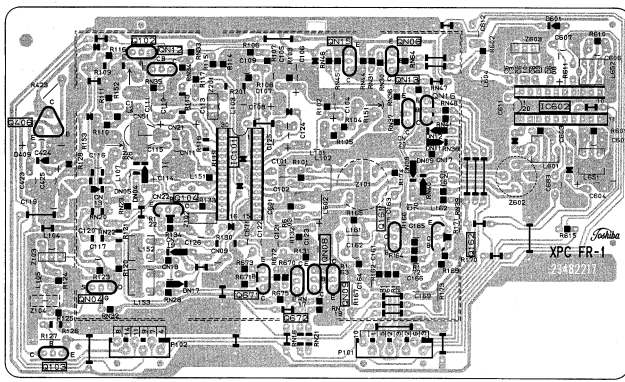
IR AMP BOARD PW9181-4

BOTTOM (FOIL) SIDE



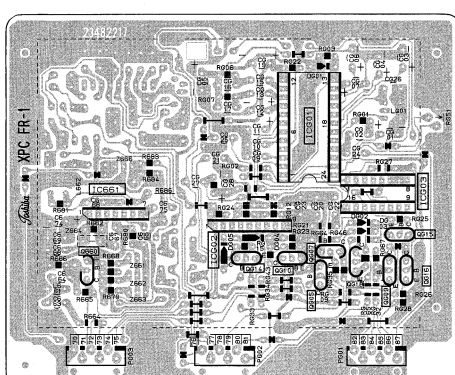
IF BOARD PW9178-1

BOTTOM (FOIL) SIDE



MPX BOARD PW9178-2

BOTTOM (FOIL) SIDE

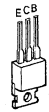


TERMINAL VIEW OF TRANSISTORS

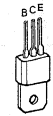
① BC327
BC337
BC547A
BC547B
BC547C
BC557A
BC557B
BC556A

② 2SK30ATM
2SK117

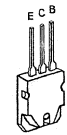
③ BD202



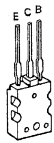
④ BF871
2SD553
2SC1569



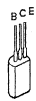
⑤ 2SC3678
2SC3182N



⑥ 2SD1427
2SD1432

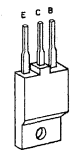


⑦ 2SC2482
2SA1321
2SC2230
2SA1020
2SC2655
2SC752GTM

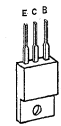


⑧ 2SC388ATM
2SA1015
2SC1959
2SA562TM

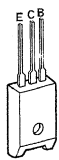
⑨ 2SD1548



⑩ 2SC2023



⑪ ON4409



MEMO

MEMO

287D9F

SCHEMATIC DIAGRAM (1/2)

IMPORTANT SAFETY NOTICE

Component marked with the International Hazard Symbol must, if changed, be replaced by an approved type and must be mounted as the original. This will ensure that the safety standards adhered to during manufacture will be maintained following any servicing procedure.

OBSERVATION OF VOLTAGES AND WAVEFORMS

1. Voltage readings were obtained using a high impedance digital voltmeter.
2. (–) or ground lead of instruments should be connected to the ground marked (⊥) in the shematic on checking Non-isolated circuit surrounded by mark but should be connected to the points marked (⏚) on checking isolated circuit.
3. The voltage readings may vary as much as ±20%.
4. Check that the Tuning, A.F.C., Brightness, Contrast and Colour controls are adjusted for the best picture, making sure that the Contrast,Brightness and Colour controls are set near to their mid-positions.
5. The waveforms were taken using a standard colour bar signal and were observed using a wide band oscilloscope via a low capacity probe.

NOTES:

1. This circuit diagram is subject to change without notice.

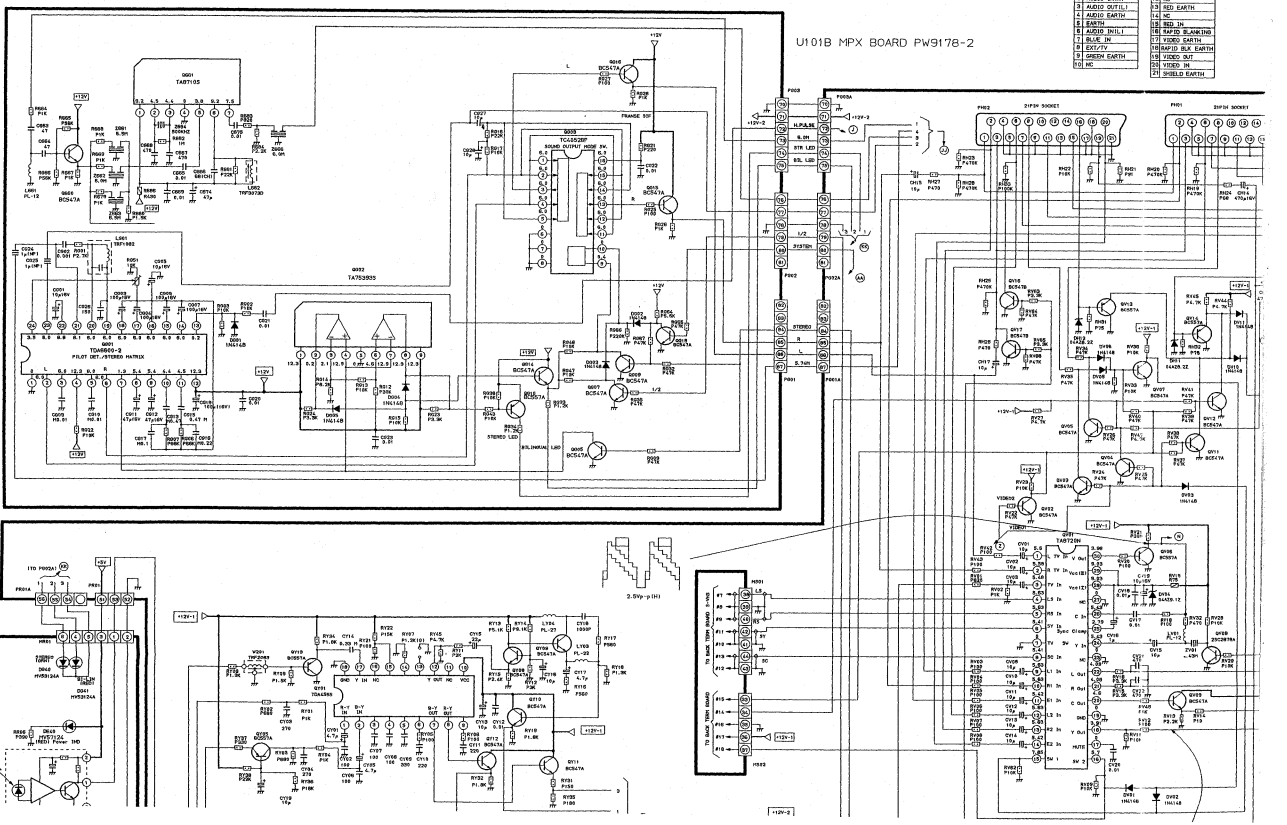
EXPRESSION

VALUE OF RESISTOR, CAPACITOR and INDUCTOR

1. Resistance is shown in ohm, k=1,000, M=1,000,000.
2. Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF and the values more than 1 in pF.
3. Unless otherwise noted in schematic, all inductor values more than 1 are expressed in μH, and the values less than 1 in H.

GROUNDING SYMBOL

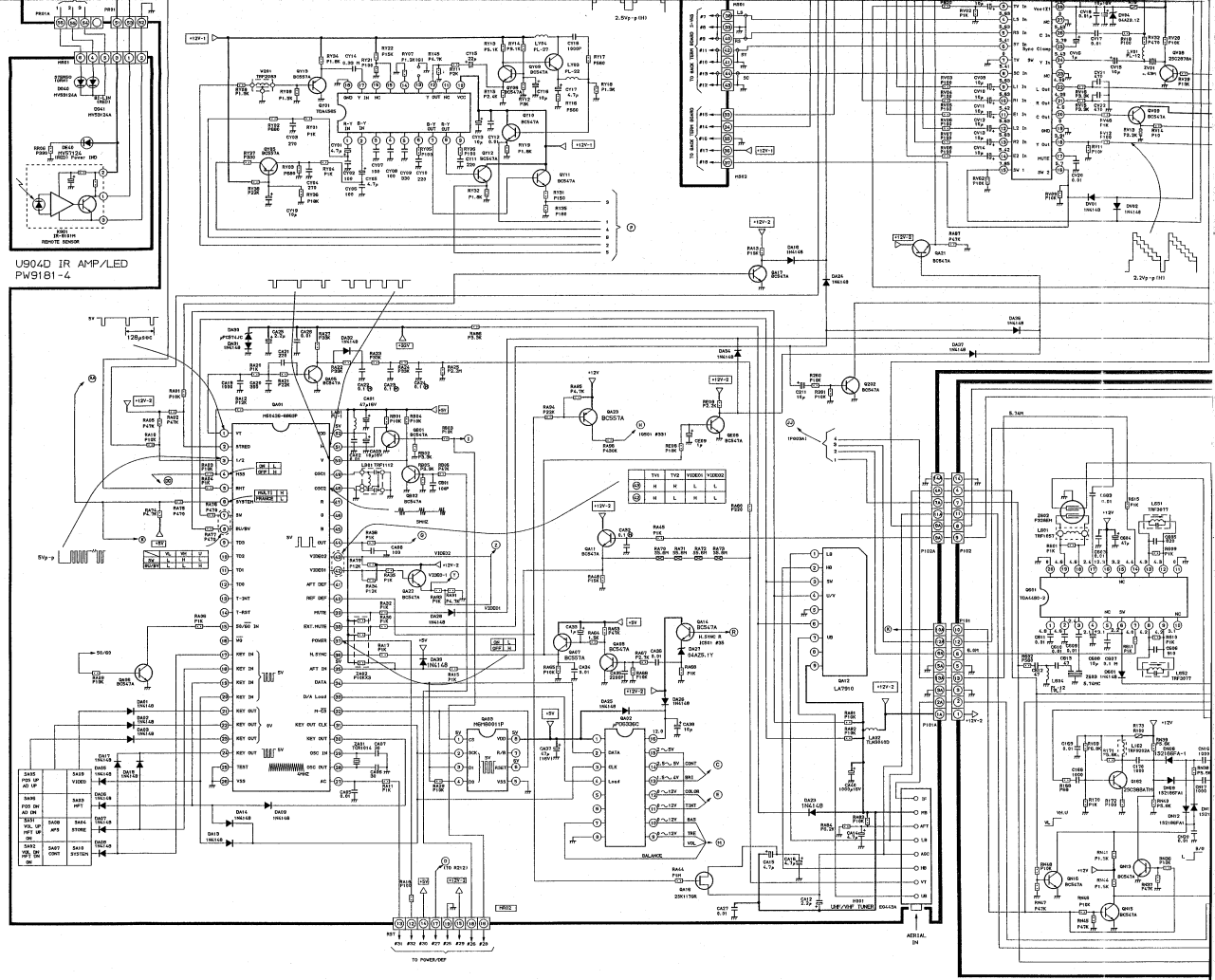
1. ⊥: Non isolated ground, ⏚ : Isolated ground.



RESIST

Prefixed

Ca
Ox
Ins
Ceme


U904D IR AMP/LED
PW9181-4
REMOTE SENSOR
TO POWER/DEF
AERIAL IN
BALANCE
LA7910
HS1426-6860P
HS1 UHF/VHF TUNER
TO BACK TERM BOARD
TO BACK TERM BOARD
2.5Vp-p (H)
2.2Vp-p (H)
128psec
5Vp-p

287D9F

SCHEMATIC DIAGRAM (2/2)

IMPORTANT SAFETY NOTICE

Component marked with the International Hazard Symbol must, if changed, be replaced by an approved type and must be mounted as the original. This will ensure that the safety standards adhered to during manufacture will be maintained following any servicing procedure.

OBSERVATION OF VOLTAGES AND WAVEFORMS

1. Voltage readings were obtained using a high impedance digital voltmeter.
2. (–) or ground lead of instruments should be connected to the ground marked (⊥) in the shematic on checking Non-isolated circuit surrounded by mark but should be connected to the points marked (⏚) on checking isolated circuit.
3. The voltage readings may vary as much as ±20%.
4. Check that the Tuning, A.F.C., Brightness, Contrast and Colour controls are adjusted for the best picture, making sure that the Contrast,Brightness and Colour controls are set near to their mid-positions.
5. The waveforms were taken using a standard colour bar signal and were observed using a wide band oscilloscope via a low capacity probe.

NOTES:

1. This circuit diagram is subject to change without notice.

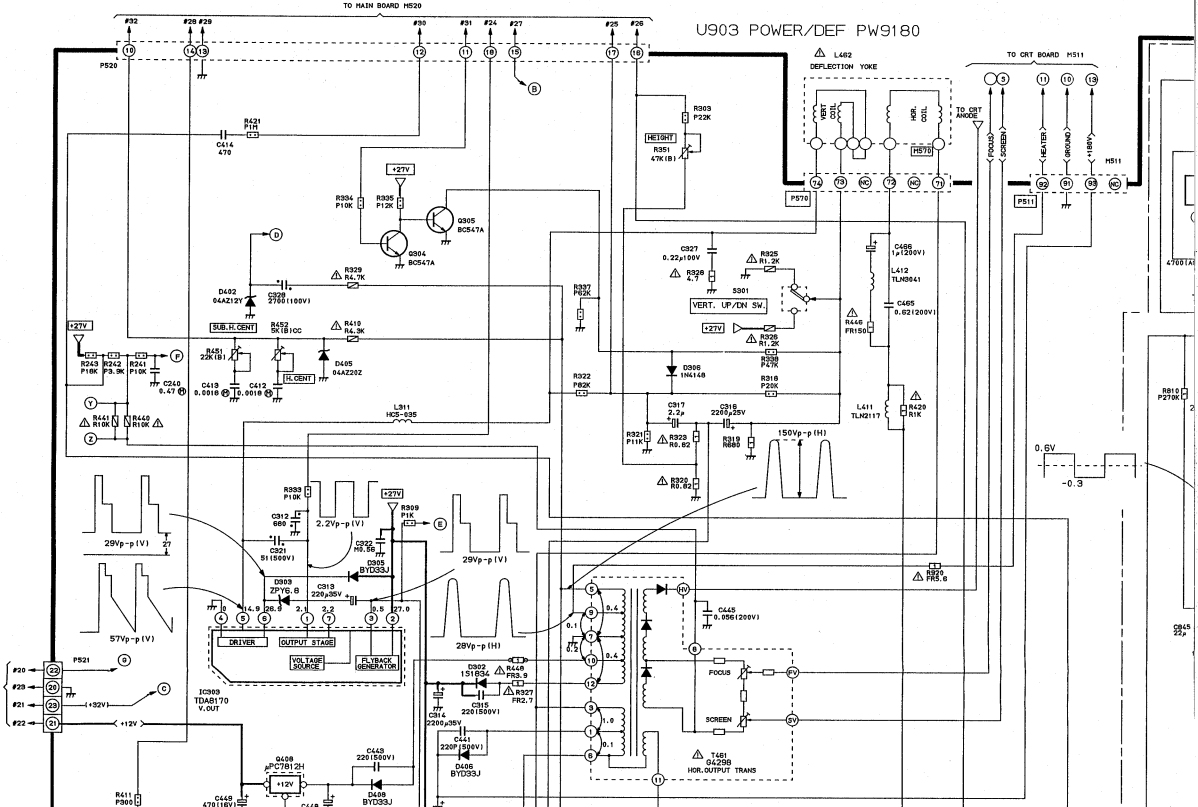
EXPRESSION

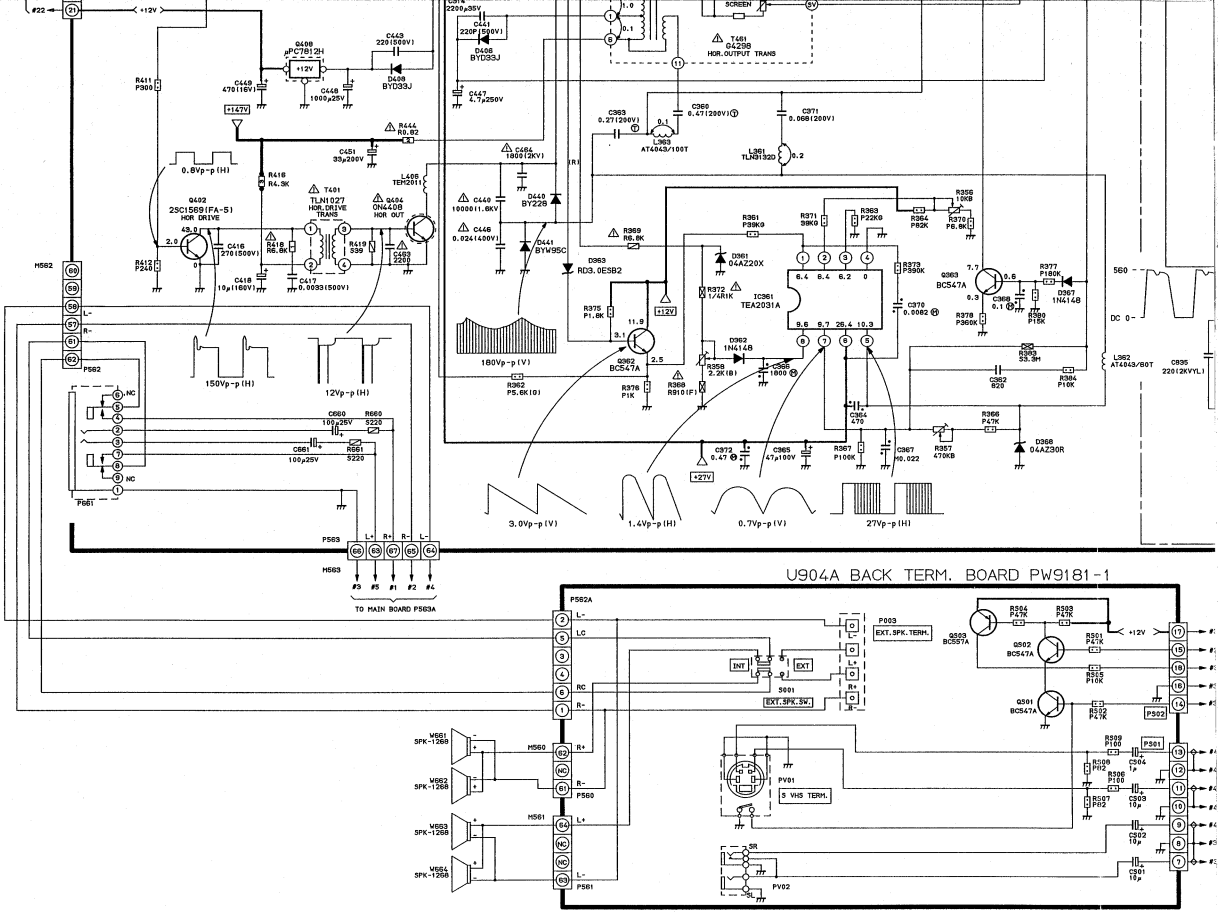
VALUE OF RESISTOR, CAPACITOR and INDUCTOR

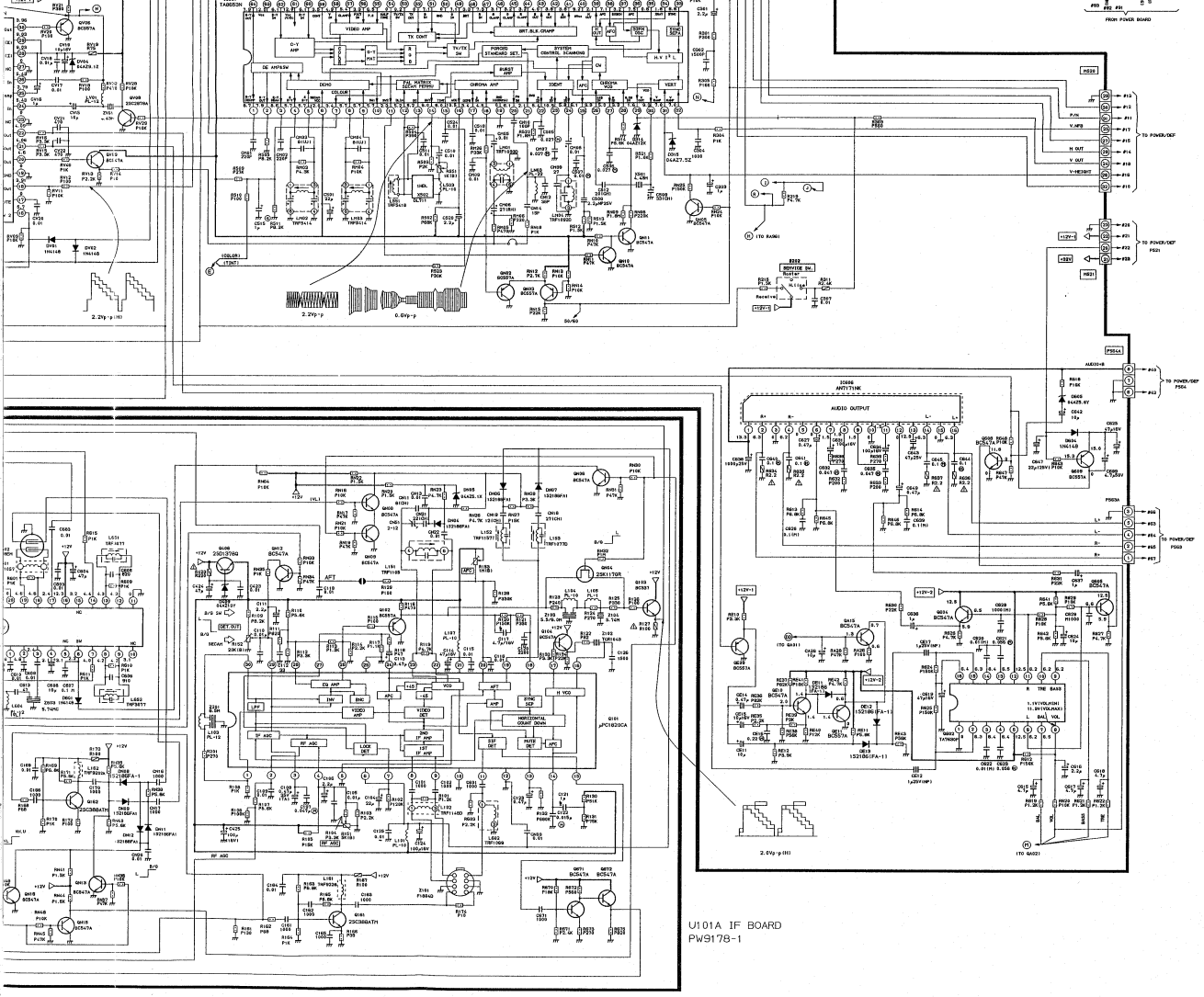
1. Resistance is shown in ohm, k=1,000, M=1,000,000.
2. Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF and the values more than 1 in pF.
3. Unless otherwise noted in schematic, all inductor values more than 1 are expressed in μH, and the values less than 1 in H.

GROUNDING SYMBOL

1. ⊥: Non isolated ground, ⏚ : Isolated ground.




U904A BACK TERM. BOARD PW9181-1
TO MAIN BOARD PS63A
EXT.SPK.TERM.
EXT.SPK.SW.
S VHS TERM.
HOR.OUTPUT TRANS
HOR.DRIVE TRANS
HOR DRIVE
HOR OUT
150Vp-p(H)
12Vp-p(H)
160Vp-p(V)
3.0Vp-p(V)
1.4Vp-p(H)
0.7Vp-p(V)
27Vp-p(H)
0.8Vp-p(H)
DC 0-



U101A IF BOARD
PW9178-1

RESISTORS

Prefixed to values:

TYPE	MARK
Carbon Comp.	S
Oxide Metal Film	R
Ins. Carbon Film	P
Wire Wound	W
Cement covered W.W.	NO MARK
Fusible Res.	FR

Suffixes to values:

TOLERANCE	MARK
±1%	(F)
±2%	(G)

Suffixes to VR values:

LAW	MARK
Linear	(B)
'C' Curve Characteristic	(C)

Rating Markings:

WATTAGE	MARK
1/6W	
1/4W	
1/2W	
1W	1
2W	2

WATTAGE	MARK
3W	3
5W	5
10W	10
15W	15
20W	20
25W	25

CAPACITORS

Rating Markings:

Type	Mark
Ceramic Disc 50V Only	
Electrolytic	
Electrolytic Non-Polar	
Variable Capacitor	
Other	

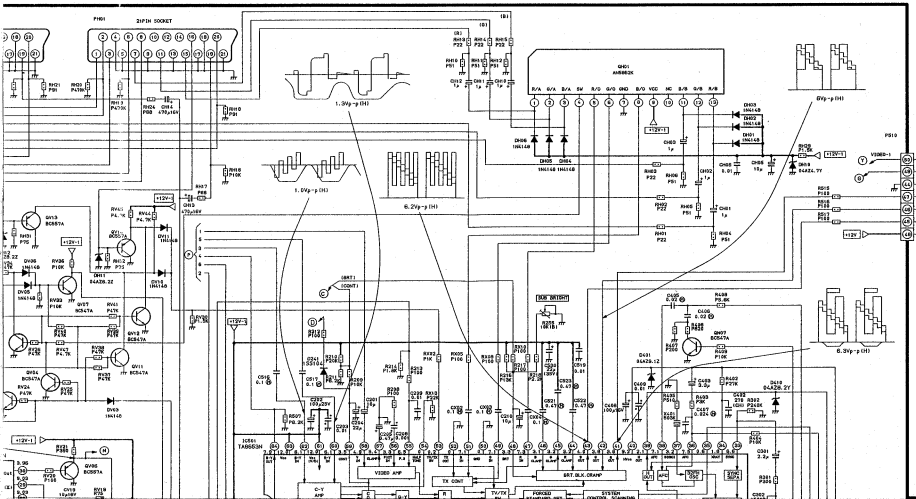
112

ire expressed in

ire expressed in

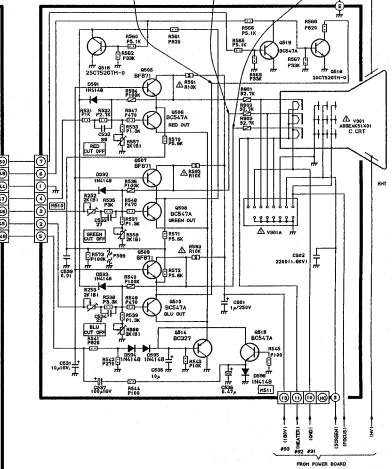
AUDIO OUT(R)	11 GREEN IN
AUDIO IN(R)	12 NC
AUDIO OUT(L)	13 RED EARTH
AUDIO EARTH	14 NC
EARTH	15 RED IN
AUDIO IN(L)	16 RAPID BLANKING
BLUE IN	17 VIDEO EARTH
EXT/TV	18 RAPID BLK. EARTH
GREEN EARTH	19 VIDEO OUT
NC	20 VIDEO IN
	21 SHIELD EARTH

U902A MAIN BOARD PW9179



120Vp-p (H) 120Vp-p (H) 120Vp-p (H)

U904B CRT DRIVE BOARD PW9181-2



RESISTORS

Prefixed to values:

TYPE	MARK
Carbon Comp.	S
Oxide Metal Film	R
Ins. Carbon Film	P
Wire Wound	W
Cement covered W.W.	NO MARK
Fusible Res.	FR

Suffixes to values:

TOLERANCE	MARK
±1%	(F)
±2%	(G)

Suffixes to VR values:

LAW	MARK
Linear	(B)
'C' Curve Characteristic	(C)

Rating Markings:

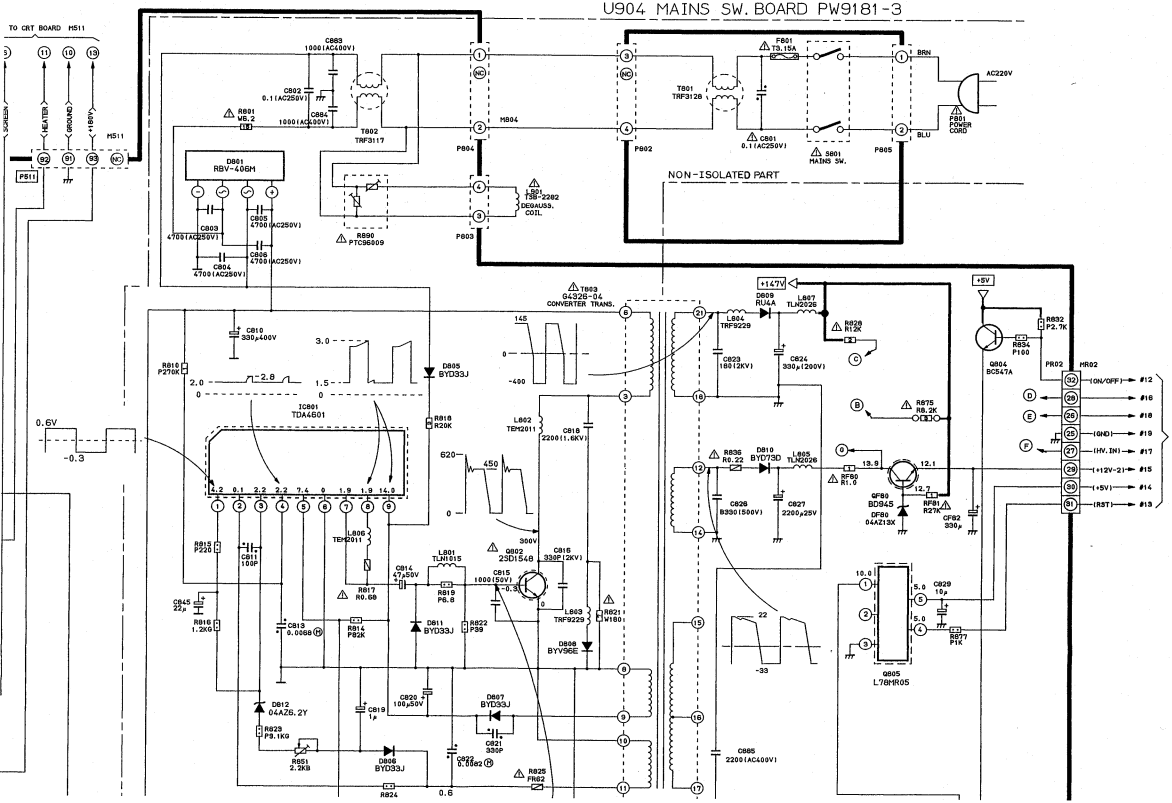
WATTAGE	MARK
1/6W	
1/4W	
1/2W	
1W	1
2W	2

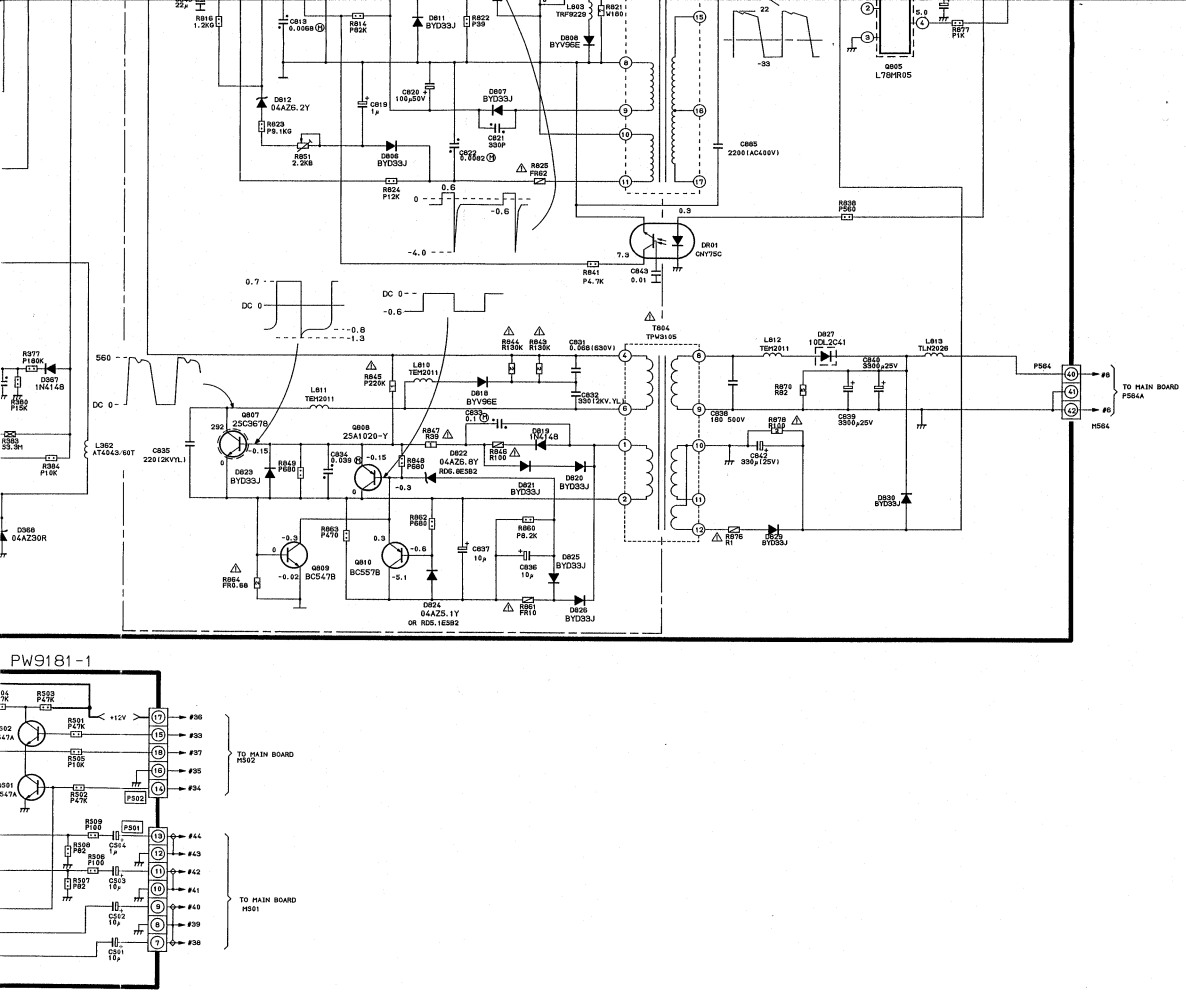
WATTAGE	MARK
3W	3
5W	5
10W	10
15W	15
20W	20
25W	25

CAPACITORS

Rating Markings:

Type	Mark
Ceramic Disc 50V Only	
Electrolytic	
Electrolytic Non-Polar	
Variable Capacitor	
Other	





PW9181-1
TO MAIN BOARD M502
TO MAIN BOARD M501
TO MAIN BOARD P584
H584
Q805 L78MR05
DR01 CNY75C
T604 TPW3105
Q807 2SC3678
Q808 2SA1020-Y
Q809 BC547B
Q810 BC557B
L362 AT4043/60T
L811 TEH2011
L810 TEH2011
L812 TEH2011
L813 TLH2026
D827 10DL2C41
D368 04AZ30R
D623 BYD33J
D624 04AZ5.1Y OR RD5.1ES2
D625 BYD33J
D626 BYD33J
D830 BYD33J
D829 BYD33J
D920 BYD33J
D921 BYD33J
D807 BYD33J
D808 BYV96E
D811 BYD33J
D812 04AZ6.2Y
D806 BYD33J
D818 BYV96E
D819 1N4148
D822 04AZ6.8Y RD6.8ES2
C835 2200(2KV)L
C865 2200(AC400V)
C838 180 500V
C839 3300μ25V
C840 3300μ25V
C842 330μ(25V)
C831 0.068(630V)
C832 330(2KV.YL)
C833 0.1
C834 0.039
C837 10μ
C836 10μ
C819 1μ
C820 100μ50V
C821 330P
C822 0.002
C813 0.068
C843 0.01
R977 P180K
R367 1M4148
R368 P15K
R383 33.3M
R384 P10K
R816 1.2KΩ
R814 P82K
R822 P39
R823 P9.1KΩ
R851 2.2KΩ
R824 P12K
R825 FR62
R841 P4.7K
R844 R130K
R843 R130K
R845 P220K
R847 R39
R849 P680
R848 P680
R846 R100
R862 P680
R863 P470
R860 P8.2K
R864 PR0.68
R861 FR10
R870 R82
R878 R100
R876 R1
R838 P560
R877 P1K
P584
P502
P501
+12V